

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 7-7-2003
 Art Unit: 1752 Phone Number: 305-0504 Serial Number: 09/966,958
 Mail Box and Bldg/Rm Location: 9805 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.
 Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Negative-acting Aqueous Photore sist Composition

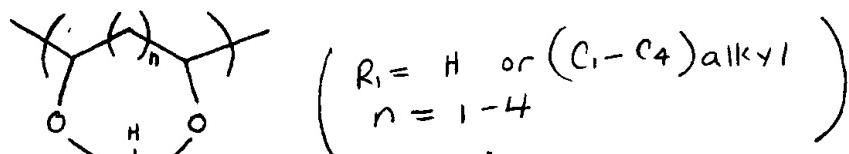
Inventors (please provide full names): Lu, Ping-Hung; Neisser, Mark D.; Dammel, Ralph R.; Wu, Hengpeng

Earliest Priority Filing Date: 9-28-2001

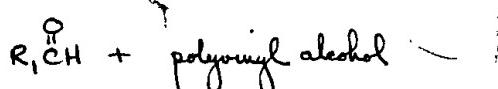
For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

— Please search for a photore sist composition

comprising a polymer ~~copolymer~~
having the following structure



(This might also be considered to be the product of polyvinyl alcohol and an aldehyde.)

*****
STAFF USE ONLYSearcher: EJ

Type of Search	Vendors and cost where applicable
NA Sequence (#)	STN \$ 395.87
AA Sequence (#)	Dialog
Structure (#)	(4) (subsets) Questel/Orbit
Bibliographic	(and) Link
Litigation	Lexis/Nexis
Fulltext	Sequence Systems
Patent Family	WWW/Internet
Other	Other (specify)

Date Completed: 07/07/03Searcher Prep & Review Time: 5

Clerical Prep Time:

Online Time: 105

SEARCH REQUEST FORM

Access DB# 9K255

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 7-7-2003
 Art Unit: 1752 Phone Number 305-0504 Serial Number: 09/966,958
 Mail Box and Bldg/Rm Location: 9805 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Negative-acting Aqueous Photoresist Composition

Inventors (please provide full names): Lu, Ping-Hung; Neisser, Mark O.; Dammel, Ralph R.; Wu, Heng Peng

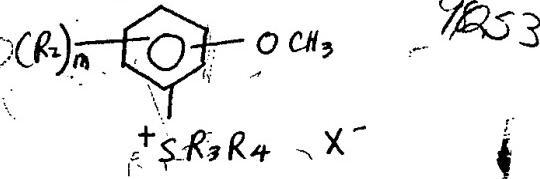
Earliest Priority Filing Date: 9-28-2001

US 20030077539 P

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

—Please search for a photoresist composition

comprising following compound (used as photoacid generating compound)



($R_2 = \text{H}$, alkyl, O-alkyl , $(\text{alkyl})\text{O-H}$, hydroxyphenyl, or multihydroxyphenyl)

R_3 & R_4 are independently (C_1-C_4) alkyl

$m = 1-3$

$X^- \rightarrow$ an anion

L18 1-49
V201-49

STAFF USE ONLY

Searcher: C

Searcher Phone #:

Searcher Location:

Date Searcher Picked Up: 7/8/03

Date Completed: 7/8/03

Searcher Prep & Review Time: 120

Clerical Prep Time:

Online Time: 60

Type of Search

NA Sequence (#)

AA Sequence (#)

Structure (#)

Bibliographic

Litigation

Fulltext

Patent Family

Other

Vendors and cost where applicable

STN

Dialog

Questel/Orbit

Dr. Link

Lexis/Nexis

Sequence Systems

WWW/Internet

Other (specify)



STIC Search Report

EIC 1700

STIC Database Tracking Number: 98255

TO: Sin J Lee
Location:
Art Unit: 1752
July 8, 2003

Case Serial Number: 09/966958

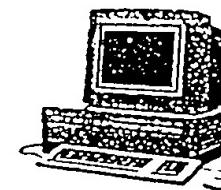
From: John Calve
Location: EIC 1700
CP3/4-3D62
Phone: 703-308-4139

Email: John.calve@uspto.gov

Search Notes

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact:*

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* Example: **1713**

➤ *Relevant prior art found, search results used as follows:*

- 102 rejection
- 103 rejection
- Cited as being of interest.
- Helped examiner better understand the invention.
- Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Sin Lee

09/966, 958

07/08/2003

=> file reg

FILE 'REGISTRY' ENTERED AT 14:23:21 ON 08 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 7 JUL 2003 HIGHEST RN 544408-69-7
DICTIONARY FILE UPDATES: 7 JUL 2003 HIGHEST RN 544408-69-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d his

(FILE 'HOME' ENTERED AT 14:06:53 ON 08 JUL 2003)

FILE 'LREGISTRY' ENTERED AT 14:07:00 ON 08 JUL 2003

L1 STR
L2 SCR 2040
L3 SCR 2043

FILE 'REGISTRY' ENTERED AT 14:10:07 ON 08 JUL 2003

L4 1 S L1 AND L2 NOT L3
L5 138 S L4 FULL
SAVE L5 LEE958/A
L6 STR L1
L7 6 S L6 SSS SAM SUB=L5
L8 132 S L6 SSS FULL SUB=L5
SAVE L8 LEE958A/A

FILE 'HCA' ENTERED AT 14:12:32 ON 08 JUL 2003

L9 88 S L8
L10 85 S L9 AND 1907-2001/PY
L11 82 S L9 AND 1907-2000/PY
L12 ANALYZE L11 1-82 RN : 1726 TERMS

FILE 'LREGISTRY' ENTERED AT 14:14:00 ON 08 JUL 2003

FILE 'REGISTRY' ENTERED AT 14:15:38 ON 08 JUL 2003
L13 130 S L8 NOT (25068-38-6 OR 25085-98-7 OR 73981-26-7 OR 214149-84-5

FILE 'HCA' ENTERED AT 14:16:39 ON 08 JUL 2003
L14 71 S L13
L15 66 S L14 AND 1907-2000/PY

FILE 'STNGUIDE' ENTERED AT 14:17:49 ON 08 JUL 2003

FILE 'REGISTRY' ENTERED AT 14:18:33 ON 08 JUL 2003

Sin Lee

09/966, 958

07/08/2003

L16 FILE 'LREGISTRY' ENTERED AT 14:19:38 ON 08 JUL 2003
STR L8

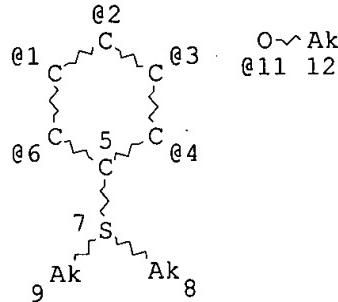
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L18 82 S L16 SSS FULL SUB=L5
SAVE L18 LEE958B/A

L19 FILE 'HCA' ENTERED AT 14:22:03 ON 08 JUL 2003
49 S L18
L20 47 S L19 AND 1907-2001/PY

FILE 'STNGUIDE' ENTERED AT 14:22:40 ON 08 JUL 2003

FILE 'REGISTRY' ENTERED AT 14:23:21 ON 08 JUL 2003

=> d que stat L18
L1 STR



VPA 11-1/2/3/4/6 U

NODE ATTRIBUTES:

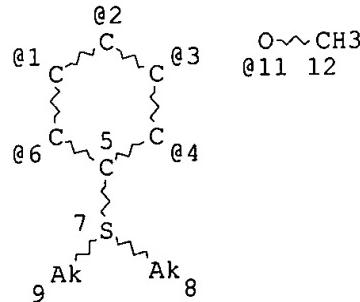
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1-X4 C AT 12

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L2 SCR 2040
L3 SCR 2043
L5 138 SEA FILE=REGISTRY SSS FUL L1 AND L2 NOT L3
L16 STR



Sin Lee

09/966,958

07/08/2003

VPA 11-1/2/3/4/6 U

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 8

CONNECT IS E1 RC AT 9

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L18 82 SEA FILE=REGISTRY SUB=L5 SSS FUL L16

100.0% PROCESSED 138 ITERATIONS

82 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 14:23:37 ON 08 JUL 2003

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FILE COVERS 1907 - 3 Jul 2003 VOL 139 ISS 2

FILE LAST UPDATED: 3 Jul 2003 (20030703/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d L20 1-47 cbib abs hitstr

L20 ANSWER 1 OF 47 HCA COPYRIGHT 2003 ACS

136:118118 Reactivities of 2,6-dimethoxyphenyl methyl sulfide, selenide and telluride with their onium salts. Asahara, Masahiro; Morikawa, Takuya; Nobuki, Shin-ichi; Erabi, Tatsuo; Wada, Masanori (Department of Materials Science, Faculty of Engineering, Tottori University, Tottori, 680-8552, Japan). Journal of the Chemical Society, Perkin Transactions 2 (10), 1899-1903 (English) 2001. CODEN: JCSPGI. ISSN: 1472-779X.
Publisher: Royal Society of Chemistry.

AB 2,6-Dimethoxyphenyl derivs. of sulfur selenium and tellurium, such as Me.PHI.E, Et.PHI.E, [Me2.PHI.E]X, [MeEt.PHI.E]X { .PHI. = 2,6-(MeO)2C6H3; E = S, Se, Te; X = MeSO4, or PF6} have been prep'd., mostly as crystals. The reaction rates and the equil. consts. for Me abstraction by Me.PHI.E from [MeR.PHI.E]ClO4 {R = Me, Et, .PHI., E'=S, Se, Te} were measured by means of 1H NMR spectra. Some representative results include: (1) R.PHI.E (R =

Me, .PHI.; E = S, Se) react commonly with [MeR.PHI.E]+ (R = Me, Et, .PHI.; E = S, Se) to give the equil. mixt., except that Me.PHI.S does not react with [MeEt.PHI.S]+; (2) R.PHI.E (R = Me, .PHI.; E = S, Se) do not react with [MeR.PHI.Te]+ (R = Me, Et, .PHI.); (3) R.PHI.Te (R = Me, .PHI.) react with [MeR.PHI.E]+ (R = Me, Et, .PHI.; E = S, Se, Te) to complete the Me abstraction (E = S, Se) or to give the equil. mixt. (E = Te); (4) the reaction rate of Me.PHI.E with [MeR.PHI.E']+ (R = Me, Et, .PHI.) increases in the orders E = S < Se < Te and E' = S apprx. Te < Se; (5) reactions of [Me2.PHI.E]+ are faster than those of [MeEt.PHI.E]+, which react faster than [Me.PHI.2E]+; (6) Me-E bond strength of [Me.PHI.2E]+ increases in the order E = S ltoreq. Se < Te but those of [Me2.PHI.E]+ and [MeEt.PHI.E]+ increase in the order E = Se ltoreq. S < Te; (7) Me-E bond strength of [MeR.PHI.E]+ (E = S, Se) increases in the order R = .PHI. < Me < Et or Me < .PHI. < Et, while Me-Te, bond strength of [MeR.PHI.Te]+ increases in the order R = .PHI. < Et < Me.

IT 146643-81-4P 146643-83-6P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (SN2 reactivities of 2,6-dimethoxyphenyl Me sulfide, selenide and telluride with their onium salts)

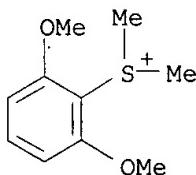
RN 146643-81-4 HCA

CN Sulfonium, (2,6-dimethoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 146643-80-3

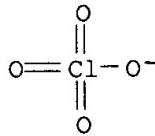
CMF C10 H15 O2 S



CM 2

CRN 14797-73-0

CMF Cl O4



RN 146643-83-6 HCA

CN Sulfonium, (2,6-dimethoxyphenyl)ethylmethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

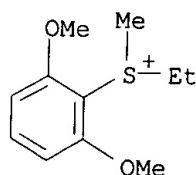
CRN 146643-82-5

CMF C11 H17 O2 S

Sin Lee

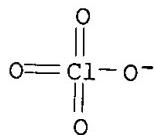
09/966, 958

07/08/2003



CM 2

CRN 14797-73-0
CMF Cl O4



IT 146643-85-8P 391209-11-3P 391209-12-4P

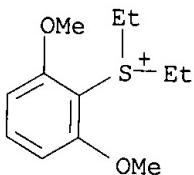
RL: SPN (Synthetic preparation); PREP (Preparation)
(SN2 reactivities of 2,6-dimethoxyphenyl Me sulfide, selenide and telluride with their onium salts)

RN 146643-85-8 HCA

CN Sulfonium, (2,6-dimethoxyphenyl)diethyl-, perchlorate (9CI) (CA INDEX NAME)

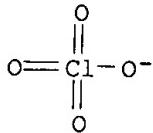
CM 1

CRN 146643-84-7
CMF C12 H19 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4



RN 391209-11-3 HCA

CN Sulfonium, (2,6-dimethoxyphenyl)dimethyl-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

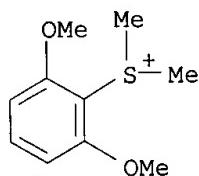
Sin Lee

09/966, 958

07/08/2003

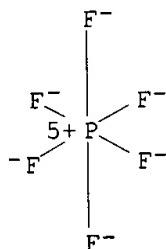
CM 1

CRN 146643-80-3
CMF C10 H15 O2 S



CM 2

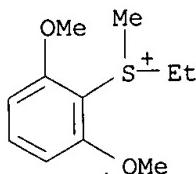
CRN 16919-18-9
CMF F6 P
CCI CCS



RN 391209-12-4 HCA
CN Sulfonium, (2,6-dimethoxyphenyl)ethylmethyl-, hexafluorophosphate(1-)
(9CI) (CA INDEX NAME)

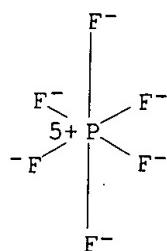
CM 1

CRN 146643-82-5
CMF C11 H17 O2 S



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



L20 ANSWER 2 OF 47 HCA COPYRIGHT 2003 ACS

133:303382 Highly-efficient photoacid generators for ArF resist. Kajita, Toru; Ishii, Hiroyuki; Usui, Shinji; Douki, Katsuji; Chawanya, Hitoshi; Shimokawa, Tsutomu (Semiconductor Material Laboratory, YOKKAICHI Research Laboratories, JSR Corporation, Mie, 510-8552, Japan). Journal of Photopolymer Science and Technology, 13(4), 625-628 (English) 2000
CODEN: JSTEEW. ISSN: 0914-9244. Publisher: Technical Association of Photopolymers, Japan.

AB The authors applied a series of photoacid generators contg. naphthalene chromophore for 193 and 248 nm lithog. Advantages of those PAGs are summarized as follows; (1) high efficiency of photoacid generation both at 248 and 193 nm, (2) relatively transparent optical characteristics at 193 nm, (3) feasibility for acidity control by changing counter anion, (4) photospeed enhancement by improvement in compatibility with host resins due to cyclic tetrahydrothiophenium structure. These PAGs could be utilized for the resist dual wavelength. The resist comprising one of the PAGs indicated promising lithog. performances, resoln. of 0.20 .mu.m L/S at 248 and resoln. of 0.13 .mu.m L/S features at 193 nm with photospeed <15 mJ/cm².

IT 300827-36-5

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

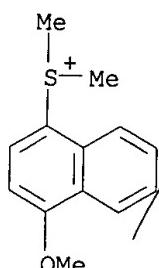
(photoacid generator, highly-efficient photoacid generators from onium compds. with naphthalene chromophore for photoresists for excimer laser exposure lithog.)

RN 300827-36-5 HCA

CN Sulfonium, (4-methoxy-1-naphthalenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

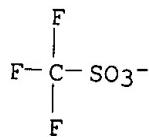
CM 1

CRN 300827-35-4
CMF C13 H15 O S



CM 2

CRN 37181-39-8
 CMF C F3 O3 S



L20 ANSWER 3 OF 47 HCA COPYRIGHT 2003 ACS

133:215451 Acid sensitive antireflective coating (ARC) and method of use.
 Holmes, Steven J.; Rabidoux, Paul A. (International Business Machines Corporation, USA). U.S. US 6110653 A 20000829, 14 pp.
 (English). CODEN: USXXAM. APPLICATION: US 1999-360935 19990726.

AB A compn. used to form an acid sensitive antireflective coating (ARC) includes a water sol. resin and a cross-linker. Radiation adsorptive components may be provided as part of the resin or, more preferably, as a sep. dye. The compn. may be applied on a substrate as a radiation adsorbing layer and addnl. cross-linked to form an acid sensitive, water insol. ARC on which a photopatterning resist (PPR) layer may be formed. Being acid sensitive, selected portions of an ARC formed from the compn. may be removed by a suitable reversal of the crosslinking followed by a develop step, preferably with an aq. developer, more preferably de-ionized water. The water sol. resin is preferably hydroxystyrene-sulfonated styrene copolymer, poly(2-isopropenyl-2-oxazoline), or poly(acrylic acid), the cross-linker is preferably an acetal diacid or a water sol. divinyl ether, and the dye is preferably 9-anthracene methanol or a squaric acid deriv. If a suitable photoacid generator (PAG) is included then an ARC formed from such components may exhibit a photosensitivity similar to or even lower than that of the overlying PPR. The photosensitivity is preferably less than about 900 mJ/cm², more preferably 100 mJ/cm² or less.

IT 214149-84-5

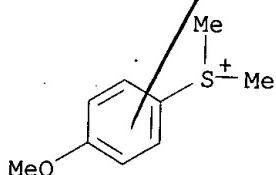
RL: TEM (Technical or engineered material use); USES (Uses)
 (photoacid generator in radiation adsorbing layer of acid sensitive ARC)

RN 214149-84-5 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

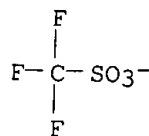
CRN 45946-58-5
 CMF C9 H13 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



L20 ANSWER 4 OF 47 HCA COPYRIGHT 2003 ACS

131:45408 Design of photoresists with reduced environmental impact. II.
 Water-soluble resists based on photocrosslinking of poly(2-isopropenyl-2-oxazoline). Havard, J. M.; Yoshida, M.; Pasini, D.; Vladimirov, N.; Frechet, J. M. J.; Medeiros, D. R.; Patterson, K.; Yamada, S.; Willson, C. G.; Byers, J. D. (Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA). Journal of Polymer Science, Part A: Polymer Chemistry, 37(9), 1225-1236 (English) 1999. CODEN: JPACEC. ISSN: 0887-624X. Publisher: John Wiley & Sons, Inc..

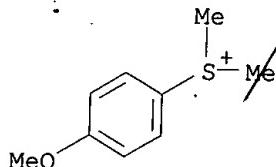
AB The performance of water- and solvent-cast, two-component photoresist films contg. poly(2-isopropenyl-2-oxazoline) or poly(2-isopropenyl-2-oxazoline-co-styrene) with a photoacid generator was studied. These materials afford neg.-tone images after deep-UV exposure and development in a suitable medium (water or toluene). Resist solns. prep'd. from polymers contg. at least 80 mol % 2-isopropenyl-2-oxazoline may be cast from and developed in pure water. Features of higher quality can be obtained when the resist is cast from 2-methoxyethanol, probably because side reactions such as partial hydrolysis of the pendant oxazoline rings in aq. environments are avoided. It was possible to resolve micrometer scale patterns using ca. 200 mJ/cm² of irradn. at 254 nm, followed by heating 2 min at 130.degree. and development in water alone. Image quality and etch resistance were improved using copolymers contg. up to 20 mol % of styrene repeat units.

IT 214149-84-5, (4-Methoxyphenyl)-dimethylsulfonium triflate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (photoacid generator; water-sol. photoresists based on
 photocrosslinking of poly(isopropenylloxazoline)s with photoacid
 generators)

RN 214149-84-5 HCA

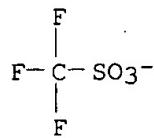
CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5
CMF C9 H13 O S

CM 2

CRN 37181-39-8
CMF C F3 O3 S



L20 ANSWER 5 OF 47 HCA COPYRIGHT 2003 ACS

130:160499 The design and study of water-soluble positive- and negative-tone imaging materials. Havard, Jennifer M.; Pasini, Dario; Frechet, Jean M. J.; Medeiros, David; Patterson, Kyle; Yamada, Shintaro; Willson, C. Grant (Department of Chemistry, University of California-Berkeley, Berkeley, CA, 94720-1460, USA). Proceedings of SPIE-The International Society for Optical Engineering, 3333(Pt. 1, Advances in Resist Technology and Processing XV), 111-121 (English) 1998. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The interest in imaging materials with improved environmental characteristics led one to consider imaging formulations coated from and developed in aq. media, thus avoiding the need for both org. solvents and basic aq. developer solns. The authors have previously reported on the design of several neg.-tone resists operating via/radiation-induced crosslinking, and while the performance of these neg.-tone systems met the basic goals, the resoln. that could be achieved was limited due to swelling occurring during development. The authors now report on various other designs based on polyoxazoline, poly(vinyl alc.), and methacrylate resins that circumvent this problem with approaches towards both neg.- and pos.-tone systems.

IT 214149-84-5

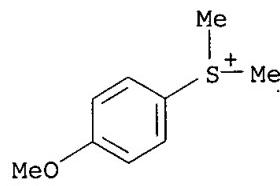
RL: PEP (Physical, engineering or chemical process); PROC (Process) (design and study of water-sol. pos.- and neg.-tone imaging polymers for chem. amplified photoresists)

RN 214149-84-5 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

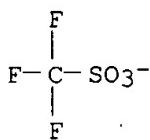
CM 1

CRN 45946-58-5
CMF C9 H13 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



L20 ANSWER 6 OF 47 HCA COPYRIGHT 2003 ACS

130:146081 New water-processible chemically amplified resists: three steps, two tones, one solvent.. Darling, Graham D.; Vekselman, Alexander M.; Yamada, Shintaro (Active Materials Inc., Ottawa, ON, K1V 6X6, Can.). Proceedings of SPIE-The International Society for Optical Engineering, 3333(Pt. 1, Advances in Resist Technology and Processing XV), 438-446 (English) 1998. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The acid-catalyzed interconversion of cyclic anhydride and di-acid or ester-acid groups within polymers rich in vicinal dicarboxyls, such as are found in many copolymers of maleic anhydride, is the basis for a new kind of resist chem. that is not susceptible to many of the problems found in existing chem.-amplified resists that are based on acid-cleavable carbonate, ester, ether or acetal groups. With sufficient vicinal dicarboxyls, or other hydrophilic contribution, the hydrated forms of these relatively UV-transparent polymers dissolve in relatively polar solvents, and even (in the extreme) in neutral water, in which the dehydrated (i.e. anhydride) forms are insol. Combining with water-dispersible diphenyliodonium initiator gives chem.-amplified resists that can thus be spin-coated, then (according to sequence of heat, humidity and UV radiation) developed into an image of either pos. or neg. tone, and eventually stripped from substrate - each step using only plain neutral water as the processing liq. Plasma etch resistance was evaluated for both hydrated and dehydrated forms of several of these polymers, including some with polycyclic comonomers: in general, a larger no. of cycles in the structure improved the etch resistance, even (surprisingly so) when such were oxygen-contg. rings of the cyclic anhydride functionalities. Such reactive films would also lend themselves well to incorporation of a variety of org. and inorg. species for "functional patterning", and oxygen plasma development.

IT 214149-84-5
RL: TEM (Technical or engineered material use); USES (Uses)
(lithog. imaging with water-processible chem. amplified photoresists)

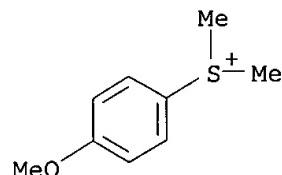
RN 214149-84-5 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

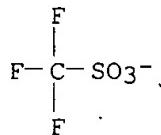
CM 1

CRN 45946-58-5

CMF C9 H13 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S

L20 ANSWER 7 OF 47 HCA COPYRIGHT 2003 ACS

130:146070 Positive and negative tone water processable photoresists: a progress report. Yamada, Shintaro; Medeiros, David R.; Patterson, Kyle; Jen, Wei-Lun K.; Rager, Timo; Lin, Qinhuang; Lenci, Carlos; Byers, Jeffrey D.; Havard, Jennifer M.; Pasini, Dario; Frechet, Jean M. J.; Willson, C. Grant (Department of Chemistry, University of Texas, Austin, TX, 78712, USA). Proceedings of SPIE-The International Society for Optical Engineering, 3333(Pt. 1, Advances in Resist Technology and Processing XV), 245-253 (English) 1998. CODEN: PSISDG. ISSN: 0277-786X.

Publisher: SPIE-The International Society for Optical Engineering.

AB This paper presents the progress the authors have made toward the development of fully water processable, neg. and pos. tone i-line resist systems. The neg. tone system is based on styrene copolymers bearing pendant ammonium sulfonate groups and vicinal diol functionalities. The salt provides the means of rendering the polymer water sol. The diol undergoes an acid catalyzed pinacol rearrangement that results in a polarity switch within the exposed polymer film, i.e. a solv. differential. The styrene backbone was chosen to provide dry etch resistance. Pos. tone imaging requires two solv. switches. The two solv. switches are based on the reaction between acidic hydroxyl groups in a matrix polymer and vinyl-ethers that are introduced as a pendant group of the polymer or as a monomeric cross-linker, i.e. a bisvinyl ether. During the post application bake, the vinyl-ether reacts with an acidic hydroxyl group in a thermally activated switch forming a crosslinked, water insol. network through acetal linkages. These acid labile crosslink sites are then cleaved by a photchem. switch through the generation of acid, thereby rendering the exposed areas water developable.

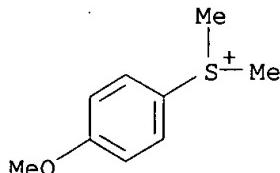
IT 214149-84-5, 4-Methoxyphenyl dimethylsulfonium triflate

RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; lithog. characterization of neg. tone water processable photoresists)

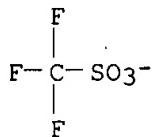
RN 214149-84-5 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5
CMF C9 H13 O S

CM 2

CRN 37181-39-8
CMF C F3 O3 S

L20 ANSWER 8 OF 47 HCA COPYRIGHT 2003 ACS

130:117251 Photoresists with reduced environmental impact. Water-soluble resists based on photocrosslinking of a sugar-containing polymethacrylate. Havard, Jennifer M.; Vladimirov, Nikolay; Frechet, Jean M. J.; Yamada, Shintaro; Willson, C. Grant; Byers, Jeffrey D. (Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA). Macromolecules, 32(1), 86-94 (English) 1999. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

AB A family of water-sol., neg.-tone, high-resoln., chem. amplified photoresists based on partially or fully deprotected poly(1,2:5,6-di-O-isopropylidene-3-O-methacryloyl-.alpha.-D-glucofuranose) is described. Both the mol. wt. of the parent ketal-protected polymer and the extent of its deprotection to a water-sol. polymer contg. 3-O-methacryloyl-D-glucopyranose repeat units must be carefully controlled to provide good coating and imaging properties. The 2 ketal protecting groups of the poly(1,2:5,6-di-O-isopropylidene-.alpha.-D-glucofuranose) have different reactivity, and their complete removal requires long reaction times under hydrolytic conditions. The detailed deprotection chem. of the polymer is readily understood through model studies with the fully and partially protected analogs of the polymer pendant groups: 1,2:5,6-di-O-isopropylidene-.alpha.-D-glucofuranose and 1,2-isopropylidene-.alpha.-D-glucopyranose. When combined with a water-sol. photochem. precursor of acid such as (4-methoxyphenyl)dimethylsulfonium trifluoromethanesulfonate, films of the deprotected or partially deprotected poly(1,2:5,6-di-O-isopropylidene-3-O-methacryloyl-.alpha.-D-glucofuranose) undergo acid-catalyzed crosslinking. The enhanced performance of the partially deprotected polymers over that of poly(3-O-methacryloyl-D-glucopyranose) suggests that the presence of remaining hydrophobic groups that afford water dispersibility rather than full solv. may be key to their performance. Imaged neg.-tone features as small as 0.2 .mu.m are obtained with these materials that have sensitivities of apprxeq. 30 mJ/cm² with wholly aq. casting and processing.

IT 214149-84-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

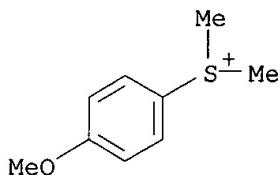
(prepn. of water-sol. photoresists based on photocrosslinking of sugar-contg. polymethacrylate)

RN 214149-84-5 HCA

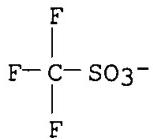
CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5
CMF C9 H13 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S

L20 ANSWER 9 OF 47 HCA COPYRIGHT 2003 ACS
 129:296068 Design and preliminary studies of environmentally enhanced water-castable, water-developable positive tone resists: model and feasibility studies. Havard, Jennifer M.; Pasini, Dario; Frechet, Jean M. J.; Medeiros, David; Yamada, Shintaro; Willson, C. Grant (Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA). ACS Symposium Series, 706(Micro- and Nanopatterning Polymers), 262-275 (English) 1998. CODEN: ACSMC8. ISSN: 0097-6156. Publisher: American Chemical Society.

~~AB The design of water sol. pos. tone resists has been explored using water-sol. poly(2-isopropenyl-2-oxazoline) as the substrate. The overall chem. amplified design incorporates two successive solv. changes to achieve the desired image tone. The initial change in solv. affecting the entire resist film is achieved during the pre-exposure thermal "bake" step, by addn. of an appropriately designed carboxylic acid modifier to the matrix. If a diacid is used, crosslinking occurs leading to insolubilization. Alternatively, a monocarboxylic acid may be used to insolubilize the poly(oxazoline) film through a simple polarity switch. The second change in solv.-affecting only those areas exposed to radiation is achieved by the photogeneration of acid within the polymer film. Upon postexposure baking, the photogenerated acid cleaves the carboxylic acid modifier in a process that restores solv. to the polymer matrix. The prep. of a variety of carboxylic acid modifiers and the demonstration of the individual steps of the overall process has been accomplished confirming the validity of this general approach to fully water-sol. pos.-tone resists.~~

IT 214149-84-5P

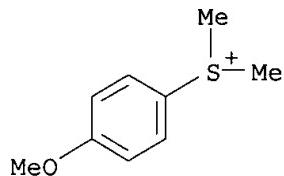
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (photoacid generator; crosslinkers and solv. modifiers for amplified water-developable pos. tone photoresists based on poly(2-isopropenyl-2-oxazoline))

RN 214149-84-5 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

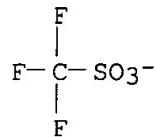
CM 1

CRN 45946-58-5
CMF C9 H13 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



L20 ANSWER 10 OF 47 HCA COPYRIGHT 2003 ACS

128:204652 Preparation of sulfonium and effect of NMR shift reagent Eu(fod)₄⁻ on ¹H and ¹³C NMR spectroscopy. Wang, Lei; Green, Thomas K. (Dep. Chem., Huabei Coal Teachers College, Huabei, Peop. Rep. China). Youji Huaxue, 18(1), 76-81 (Chinese) 1998. CODEN: YCHHDX. ISSN: 0253-2786.

Publisher: Kexue Chubanshe.

AB Eight dimethylphenylsulfonium tetrafluoroborates ArS+(CH₃)₂BF₄⁻ (Ar = Ph, 4-MeC₆H₄, 4-MeOC₆H₄, 4-F₃CC₆H₄, 4-2ONC₆H₄, 3-MeC₆H₄, etc.) were prepd. The effect of ¹H and ¹³C NMR spectra of sulfonium salts by NMR shift reagent Eu(fod)₄⁻ was studied in solvent CDCl₃. The results showed that Eu(fod)₄⁻ was an effective NMR shift reagent for sulfonium salts and ¹H NMR spectra of Me shift varies linearly with ¹³C NMR spectra of Me shift in dimethylphenylsulfonium salts in the presence of NMR shift reagent Eu(fod)₄⁻.

IT 74633-71-9P 203933-26-0P

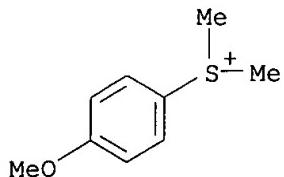
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of sulfonium and effect of NMR shift reagent Eu(fod) on H and C NMR spectroscopy)

RN 74633-71-9 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5
CMF C9 H13 O S

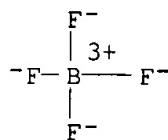


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



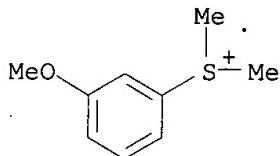
RN 203933-26-0 HCA

CN Sulfonium, (3-methoxyphenyl)dimethyl-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 203933-25-9

CMF C9 H13 O S

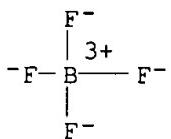


CM 2

CRN 14874-70-5

CMF B F4

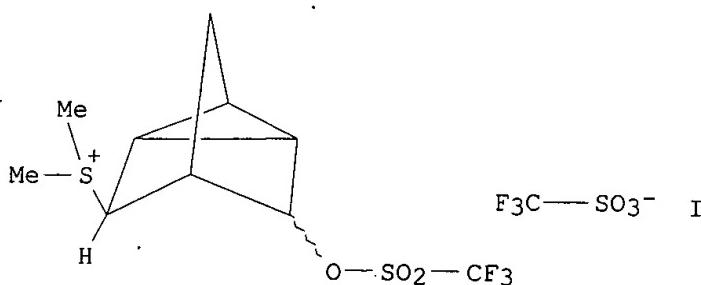
CCI CCS



L20 ANSWER 11 OF 47 HCA COPYRIGHT 2003 ACS

127:135576 Reaction of dimethyl sulfide ditriflate with alkenes. Synthesis of sulfur derivatives of nortricyclane. Nenajdenko, Valentine G.; Vertelezkij, Pavel V.; Gridnev, Ilya D.; Shevchenko, Nikolai E.; Balenkova, Elizabeth (Dep. Chem., Moscow State Univ., Moscow, 119899, Russia). Tetrahedron, 53(24), 8173-8180 (English) 1997. CODEN: TETRAB. ISSN: 0040-4020. OTHER SOURCES: CASREACT 127:135576. Publisher: Elsevier.

GI

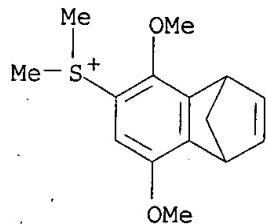


AB The reaction of di-Me sulfide ditriflate with alkenes leads to the corresponding sulfonium salts. Dependence of the reaction course on the substrate structure is discussed. In the reactions with norbornene and norbornadiene the sulfonium salts of nortricyclene skeleton were obtained. The configuration of the two isomeric disubstituted nortricyclanes I was detd. by NMR.

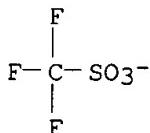
IT 192887-86-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (reaction of di-Me sulfide ditriflate with alkenes. Synthesis of sulfur derivs. of nortricyclane)

RN 192887-86-8 HCA
 CN Sulfonium, (1,4-dihydro-5,8-dimethoxy-1,4-methanonaphthalen-6-yl)dimethyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 192887-85-7
 CMF C15 H19 O2 S

CM 2

CRN 37181-39-8
 CMF C F3 O3 S

L20 ANSWER 12 OF 47 HCA COPYRIGHT 2003 ACS
 126:292956 .alpha.-Effect with Substituted N-Methylbenzohydroxamates and Substituted Phenyldimethylsulfonium Salts: Toward an Understanding of the Intrinsic .alpha.-Effect. Fountain, K. R.; Dunkin, Timothy W.; Patel,

Kamlesh D. (Truman State University, Kirksville, MO, 63501, USA). Journal of Organic Chemistry, 62(9), 2738-2741 (English) 1997. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.

GI



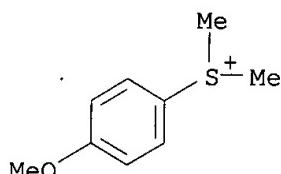
AB Increasing electron demand in the reactions of G-NMBH anions (I; R= 4-MeO, 4-NO₂, 3,5-di-NO₂, 4-Cl, H) with substituted phenyldimethylsulfonium ions (II; R1= H, 4-NO₂, 4-CN, 4-MeO) decreases the α -effect for the Me transfers toward 1.0 (zero effect). An extrapolation shows the possibility of an inverse effect (<1.0). The reactivity of G-NMBH anions correlates with SET parameters and with the known propensity of phenyldimethylsulfonium ions to accept a single electron into a σ^* C-S orbital concomitant with expulsion of a CH₃ group. These correlations indicate inclusion of some SET character into the wavefunction of the S_N2 transition state for these reactions, in agreement with the Shaik and Pross SCD model of the S_N2 reaction.

IT 45946-58-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactivity of substituted methylbenzohydroxamates with phenyldimethylsulfonium salts)

RN 45946-58-5 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl- (9CI) (CA INDEX NAME)



L20 ANSWER 13 OF 47 HCA COPYRIGHT 2003 ACS

126:185764 Correlations of pKlgMe with Reduction Potentials. Fountain, K. R.; Patel, Kamlesh D.; Dunkin, Timothy W.; Powers, Janette A.; Van Galen, Dean A. (Division of Sciences, Truman State University, Kirksville, MO, 63501, USA). Journal of Organic Chemistry, 62(4), 853-856 (English) 1997. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.

AB The quant. indexes for the ability of leaving groups to depart from C atoms are pKlgMe. In the cases of Me transfers from arenesulfonates, these parameters have correlated a large no. of nucleophilic data. A new scale of these parameters has been defined from Me transfer data between phenylmethyl thioethers. The pKlgMe data from both sets of compds. correlated with both exptl. E1/2 values and ELUMO values from computational chem. These correlations support the SCM model of Shaik et al. which requires the leaving group to display some SET character in an S_N2 transition state.

IT 74633-71-9

RL: PRP (Properties)
(correlation of redn. potential of dimethylphenylsulfonium fluoroborate with Me leaving group quant. index)

RN 74633-71-9 HCA

Sin Lee

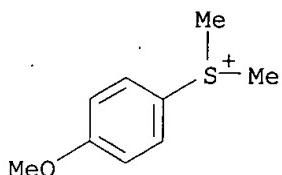
09/966, 958

07/08/2003

CN Sulfonium, (4-methoxyphenyl)dimethyl-, tetrafluoroborate(1-) (9CI) (CA
INDEX NAME)

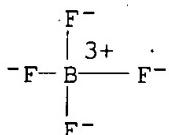
CM 1

CRN 45946-58-5
CMF C9 H13 O S



CM 2

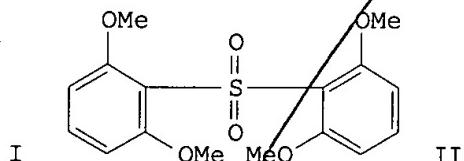
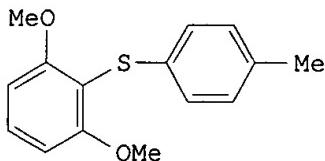
CRN 14874-70-5
CMF B F4
CCI CCS



L20 ANSWER 14 OF 47 HCA COPYRIGHT 2003 ACS

119:138808 Organo-phosphorus and -sulfur compounds containing 2,6-di-methoxyphenyl group. II. Preparation and properties of 2,6-dimethoxyphenylthio-derivatives. Wada, Masanori; Kajihara, Kazuhisa; Nishimura, Katsuyuki; Tenma, Keishi; Erabi, Tatsuo (Fac. Eng., Tottori Univ., Tottori, 680, Japan). Kenkyu Hokoku - Asahi Garasu Zaidan, 58, 287-93 (Japanese) 1991. CODEN: KHAZE2. ISSN: 0916-7064. OTHER SOURCES: CASREACT 119:138808.

GI



AB Lithiation of 1,3-dimethoxybenzene was followed by treatment with N,N,N',N'-tetramethyl-1,2-ethanediamine and by treatment with sulfur in benzene to give 2,6-dimethoxybenzenethiol. From this S-alkyl and S-aryl derivs., e.g. I or II, were prep'd.

IT 146643-81-4P 146643-83-6P 146643-85-8P

146643-87-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, from dimethoxybenzenethiol, process for)

RN 146643-81-4 HCA

Sin Lee

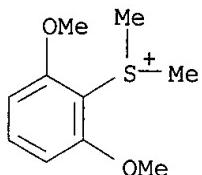
09/966, 958

07/08/2003

CN Sulfonium, (2,6-dimethoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX
NAME)

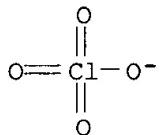
CM 1

CRN 146643-80-3
CMF C10 H15 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4

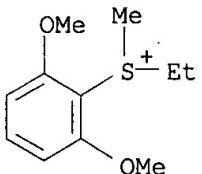


RN 146643-83-6 HCA

CN Sulfonium, (2,6-dimethoxyphenyl)ethylmethyl-, perchlorate (9CI) (CA INDEX
NAME)

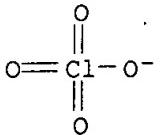
CM 1

CRN 146643-82-5
CMF C11 H17 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4



RN 146643-85-8 HCA

John Calve, EIC - 1700

Page 20

703-308-4139

Sin Lee

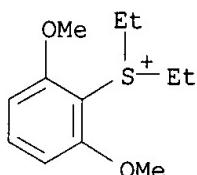
09/966, 958

07/08/2003

CN Sulfonium, (2,6-dimethoxyphenyl)diethyl-, perchlorate (9CI) (CA INDEX NAME)

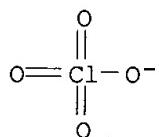
CM 1

CRN 146643-84-7
CMF C12 H19 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4

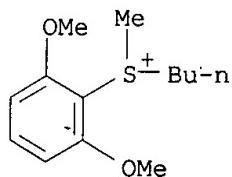


RN 146643-87-0 HCA

CN Sulfonium, butyl(2,6-dimethoxyphenyl)methyl-, perchlorate (9CI) (CA INDEX NAME)

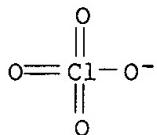
CM 1

CRN 146643-86-9
CMF C13 H21 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4



L20 ANSWER 15 OF 47 HCA COPYRIGHT 2003 ACS

116:131247 Preparation of triarylsulfoxonium salts and their use as initiators for cationic photopolymerization. Irving, Edward; Taylor, David Alan; Lunn, Robert James; Innocenzi, John Paul; Haines, Alan Hugh (CIBA Ltd., Switz.). Brit. UK Pat. Appl. GB 2238787 A1 19910612, 24 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1989-27530 19891206.

AB R1R2R3S+O X- [I; R1, R2, R3 = (substituted) C6-10 aryl, X = anion], useful as initiators for cationic polymn. of compds. such as diepoxides in the manuf. of coatings, are prep'd. by oxidn. of the corresponding sulfonium salts using a peracid under basic conditions in a nonketone solvent. Use of the basic conditions and nonketone solvent improves the yield and eliminates contamination of the product with the starting material. Thus, a soln. of 5.1 g NaOH and 6.7 g 30% aq. H₂O₂ soln. in 50 mL water was added dropwise to 300 mL MeOH contg. 5.6 g (4-MeOC₆H₄)Ph₂SPF₆ and 6.1 g p-toluenesulfonyl chloride at 15. degree. With stirring, and the mixt. was allowed to warm to room temp. overnight to give 84% yield I (R1 = 4-MeOC₆H₄, R2 = R3 = Ph, X = PF₆) (II). Irradn. of a mixt. contg. 100 parts bisphenol A diglycidyl ether and 3 parts II on tin plate with a 5000-W metal halide lamp 75 cm from the plate provided a tack-free coating in 2 mins.

IT 139572-86-4P

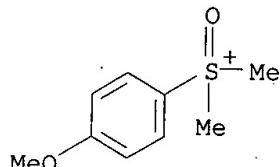
RL: PREP (Preparation)

(manuf. of, for cationic photopolymn. catalysts)

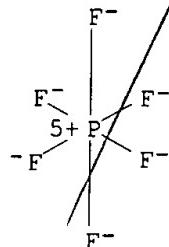
RN 139572-86-4 HCA

CN Sulfoxonium, (4-methoxyphenyl)dimethyl-, hexafluorophosphate(1-) (9CI)
(CA INDEX NAME)

CM 1

CRN 48126-66-5
CMF C9 H13 O2 S

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

L20 ANSWER 16 OF 47 HCA COPYRIGHT 2003 ACS

113:212726 New synthesis of aryl-substituted sulfonium salts and their applications in photoinitiated cationic polymerization. Akhtar, S. R.; Crivello, J. V.; Lee, J. L.; Schmitt, M. L. (Dep. Chem., Rensselaer Polytech. Inst., Troy, NY, 12180, USA). Chemistry of Materials, 2(6), 732-7 (English) 1990. CODEN: CMATEX. ISSN: 0897-4756.

AB Catalysts for photochem. polymn. and crosslinking were prep'd. by a 1-pot method in which dialkyl and diaryl sulfoxides were condensed with arom. compds. substituted with electron-donating substituents in the presence of P2O5/MeSO3H. All of the prep'd. aryl-substituted sulfonium salts were photoactive and initiated rapid and exothermic polymn. when irradiated in the presence of typical cationically polymerizable monomers such as epoxides, α -methylstyrene, and vinyl ethers. In polymn. of 1,2-epoxydecane and dodecyl vinyl ether, photopolymns. were not successful using $\text{Ph}_3\text{S}^+\text{SbF}_6^-$ due to the insol. of the photoinitiator in the monomers. Sulfonium salts contg. long alkoxy substituents were esp. attractive as photoinitiators because of their excellent UV spectral absorption characteristics, their solv. in nonpolar monomers and polymers, and their high efficiency in photoinitiated cationic polymn. The prepn. and characterization of the sulfonium compds. are described and dicussed.

IT 127279-89-4P

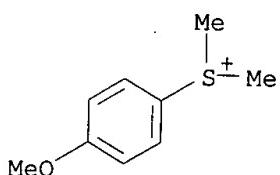
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and characterization of, as photochem. polymn. catalysts)

RN 127279-89-4 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

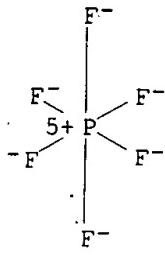
CM 1

CRN 45946-58-5
CMF C9 H13 O S



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



L20 ANSWER 17 OF 47 HCA COPYRIGHT 2003 ACS

113:58607 Synthesis and absolute configurations of optically active .

oxosulfonium salts. Takeuchi, Hiroyuki; Minato, Hiroshi; Kobayashi, Michio; Yoshida, Masato; Matsuyama, Haruo; Kamigata, Nobumasa (Fac. Sci., Tokyo Metrop. Univ., Tokyo, 158, Japan). Phosphorus, Sulfur and Silicon and the Related Elements, 47(1-2), 165-72 (English) 1990.

CODEN: PSSLEC. ISSN: 1042-6507. OTHER SOURCES: CASREACT 113:58607.

AB Optically active aryl Et Me oxosulfonium perchlorates were prep'd. by the oxidn. of the corresponding sulfonium salts with sodium perbenzoate. The abs. configurations of oxosulfonium salts were detd. by converting them into aryl Et sulfoxides. The CD spectra of optically active oxosulfonium perchlorates with (+)-(R) configuration show a pos. strong Cotton effect at ca. 230 nm and a pos. weak one at ca. 260 nm. Whereas, the CD spectra of optically active oxosulfonium perchlorates with (-)-(S) configuration show a neg. strong Cotton effect at ca. 230 nm and a neg. one at ca. 260 nm.

IT 128092-49-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and conversion to chiral Et methoxyphenyl sulfoxide and abs.
configuration of)

RN 128092-49-9 HCA

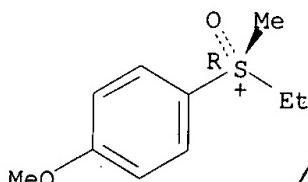
CN Sulfoxonium, ethyl(4-methoxyphenyl)methyl-, (R)-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 128092-48-8

CMF C10 H15 O2 S

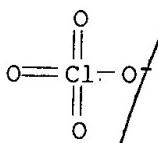
Absolute stereochemistry.



CM 2

CRN 14797-73-0

CMF Cl O4



IT 128240-66-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and optical resoln. and conversion to perchlorate salt of)

RN 128240-66-4 HCA

CN Sulfonium, ethyl(4-methoxyphenyl)methyl-, (+)-, salt with
(1S)-7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

CM 1

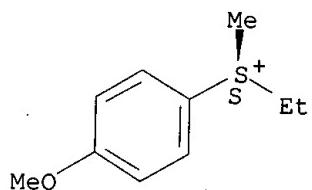
Sin Lee

09/966, 958

07/08/2003

CRN 51210-65-2
CMF C10 H15 O S

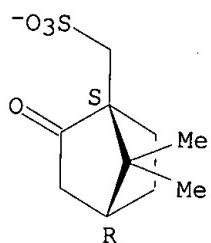
Absolute stereochemistry.



CM 2

CRN 46362-90-7
CMF C10 H15 O4 S

Absolute stereochemistry.



IT 51210-66-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and oxidn. of, with sodium perbenzoate)

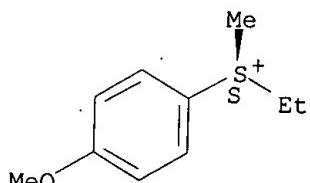
RN 51210-66-3 HCA

CN Sulfonium, ethyl(4-methoxyphenyl)methyl-, (S)-, perchlorate (9CI) (CA INDEX NAME)

CM 1

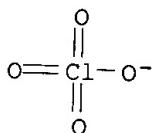
CRN 51210-65-2
CMF C10 H15 O S

Absolute stereochemistry.



CM 2

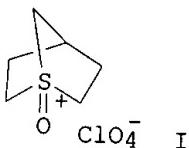
CRN 14797-73-0
CMF Cl O4



L20 ANSWER 18 OF 47 HCA COPYRIGHT 2003 ACS

113:39893 Synthesis of oxosulfonium salts by the oxidation of sulfonium salts.
Mori, Mitsuo; Takeuchi, Hiroyuki; Minato, Hiroshi; Kobayashi, Michio;
Yoshida, Masato; Matsuyama, Haruo; Kamigata, Nobumasa (Fac. Sci., Tokyo
Metrop. Univ., Tokyo, 158, Japan). Phosphorus, Sulfur and Silicon and the
Related Elements, 47(1-2), 157-64 (English) 1990. CODEN:
PSSLEC. ISSN: 1042-6507. OTHER SOURCES: CASREACT 113:39893.

GI



AB A general synthetic method for oxosulfonium salts by oxidn. of sulfonium salts with sodium perbenzoate (or sodium m-chloroperbenzoate) was developed. In case of the oxidn. of aryldimethylsulfonium salts, the corresponding oxosulfonium salts were obtained in 64-91% yields. Diphenylmethylsulfonium and triphenylsulfonium salts were also oxidized with sodium perbenzoate to afford the corresponding oxosulfonium salts in 75 and 58% yields, resp. Trialkylsulfonium salts such as trimethylsulfonium, dimethyloctylsulfonium, S-methylthiolanium, and S-methyl(pentamethylene)sulfonium salts, were also oxidized to the corresponding oxosulfonium salts in good yields. To clarify the reaction mechanisms, the oxidn. of bicyclo[2.2.1]heptane-1-sulfonium salt was investigated and found to afford oxosulfonium salt I in 50% yield. A reaction mechanism involving nucleophilic attack by perbenzoate anion on the cationic S atom of sulfonium salt and giving an S-O sulfurane intermediate is proposed.

IT 5556-65-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and perbenzoate oxidn. of)

RN 5556-65-0 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

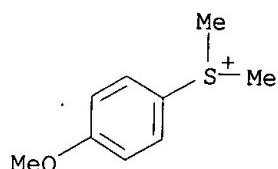
CM 1

CRN 45946-58-5
CMF C9 H13 O S

Sin Lee

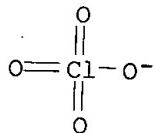
09/966, 958

07/08/2003



CM 2

CRN 14797-73-0
CMF Cl O4



IT 128094-69-9P

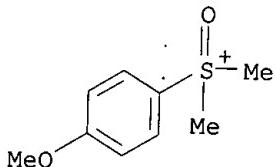
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 128094-69-9 HCA

CN Sulfoxonium, (4-methoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX
NAME)

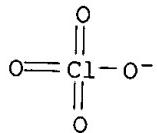
CM 1

CRN 48126-66-5
CMF C9 H13 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4



L20 ANSWER 19 OF 47 HCA COPYRIGHT 2003 ACS

113:23235 Synthesis of aryl-substituted sulphonium salts by the phosphorus pentoxide-methanesulfonic acid promoted condensation of sulfoxides with aromatic compounds. Akhtar, S. R.; Crivello, J. V.; Lee, J. L. (Dep.

Chem., Rensselaer Polytech. Inst., Troy, NY, 12180, USA). Journal of Organic Chemistry, 55(13), 4222-5 (English) 1990. CODEN: JOCEAH. ISSN: 0022-3263. OTHER SOURCES: CASREACT 113:23235.

AB A versatile new method which has been developed for the synthesis of aryl-substituted sulfonyl salts in high yields by the direct condensation of sulfoxides with arom. compds. in the presence of a mixt. of P2O5 and methanesulfonic acid was reported. Reaction proceeded in 1-3 h at 25-40.degree. under homogeneous conditions to yield the sulfonyl salts on subsequent workup in water. A variety of representative dialkyl monoaryl, triaryl- and bisulfonyl salts were prep'd. by this method. The sulfonyl salts are photoactive and have applications as photoinitiators for cationic polyrn.

IT 127279-89-4P~

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

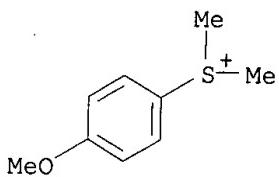
RN 127279-89-4 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5

CMF C9 H13 O S



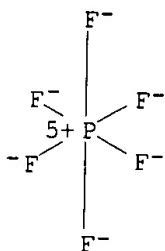
BioTech & Chem
60241.361

CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L20 ANSWER 20 OF 47 HCA COPYRIGHT 2003 ACS

111:123901 Reversible photochromic compositions. Kawamura, Fumio; Azuma, Takao (Tomoegawa Paper Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63227689 A2 19880921 Showa, 10 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1987-61374 19870318.

AB A reversible photochromic compn. comprises a dialkyl(4-hydroxyphenyl)sulfonyl salt, an electron donor color forming org. compd., and a compd. with proton affinity. Optionally the above compn. is microencapsulated. The material acquires color upon exposure to light and

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loses its color upon heating with the process being reversible. The material is useful in various imaging materials, photoprinting, facsimile, and in presensitized plates.

IT 73981-26-7

RL: USES (Uses)
(photo-activator, photochromic compns. contg.)

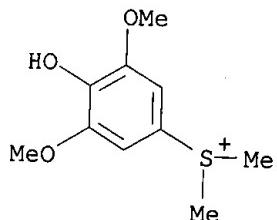
RN 73981-26-7 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7

CMF C10 H15 O3 S

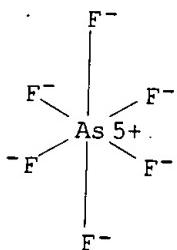


CM 2

CRN 16973-45-8

CMF As F6

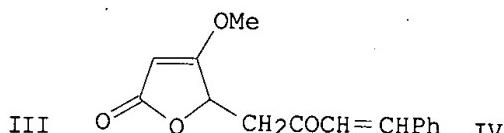
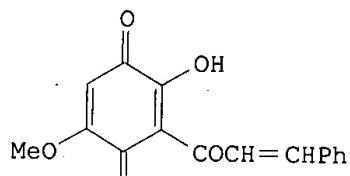
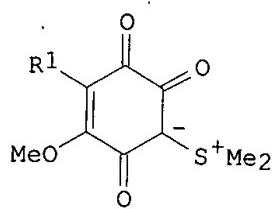
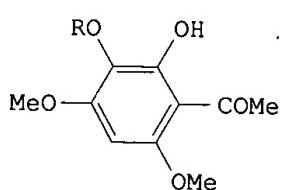
CCI CCS



L20 ANSWER 21 OF 47 HCA COPYRIGHT 2003 ACS

105:226114 Oxidative rearrangement of quinochalcones. Part 2. A facile synthesis of linderone. Bennett, Graham J.; Lee, Hiok Huang (Dep. Chem., Natl. Univ. Singapore, Singapore, 0511, Singapore). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (4), 633-8 (English) 1986. CODEN: JCPRB4. ISSN: 0300-922X. OTHER SOURCES: CASREACT 105:226114.

GI



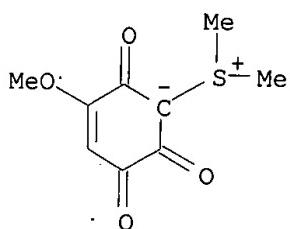
AB Friedel-Crafts acylation of 1,2,3,5-(MeO)4C6H2 afforded acetophenones I (R = Me, Et). Methylpedicinin, prep'd. from I (R = Me), reacted with Ac2O-DMSO, yielding linderone acetate, linderone cinnamate, MeSCH2O2CCH:CHPh, and the ylide II (R1 = OMe). The acetate was readily hydrolyzed to linderone. Reaction of quinochalcone III with Ac2O-DMSO gave, on the other hand, the ylide II (R1 = H) as the major product besides MeSCH2O2CCH:CHPh and Z- and E-butenolides IV.

IT 105342-77-6P 105376-25-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

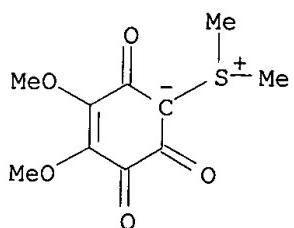
RN 105342-77-6 HCA

CN Sulfonium, dimethyl-, 3-methoxy-2,5,6-trioxo-3-cyclohexen-1-ylide (9CI)
(CA INDEX NAME)



RN 105376-25-8 HCA

CN Sulfonium, dimethyl-, 3,4-dimethoxy-2,5,6-trioxo-3-cyclohexen-1-ylide
(9CI) (CA INDEX NAME)



104:5628 Sulfonium compounds. (Taiho Pharmaceutical Co., Ltd., Japan). Jpn.
 Kokai Tokkyo Koho JP 60032762 (A2) 19850219 Showa, 6 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1983-142849 19830803.
 AB The title compds. RR₁S+(CH₂)_nC₆H₄R₂X- (I; R, R₁ = alkyl; R₂ = H, OH, alkoxy, acyl, Bz, BzO, PhO; n = 0-3; X = acid residue), which repress passive cutaneous anaphylaxis reaction, were prep'd. Thus, treating PhSH with MeI in NaOH-contg. EtOH gave 91.9% MeSPh, which was treated with 4-MeC₆H₄SO₃Me at room temp. for 48 h to give 95.2% I (R = R₁ = Me; R₂ = H; n = 0; X = O₃SC₆H₄Me-4).

IT 99103-91-0P

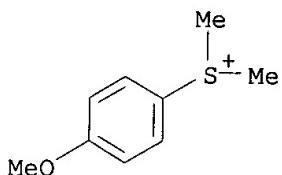
RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of, as antiallergic)

RN 99103-91-0 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

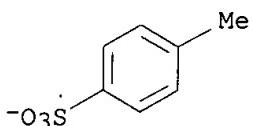
CM 1

CRN 45946-58-5
 CMF C₉ H₁₃ O S



CM 2

CRN 16722-51-3
 CMF C₇ H₇ O₃ S



L20 ANSWER 23 OF 47 HCA COPYRIGHT 2003 ACS

102:167245 Recent advances in thermally and photochemically initiated cationic polymerization. Crivello, James V.; Lee, J. L. (Gen. Electr. Corp. Res. and Dev., Schenectady, NY, 12301, USA). Polymer Journal (Tokyo, Japan), 17(1), 73-83 (English) 1985. CODEN: POLJB8. ISSN: 0032-3896.

AB Classes of arylsulfonium salts are discussed which have enhanced efficiency as photoinitiators or thermal initiators of cationic polymn. One of these compds., p-PhSC₆H₄SPh₂⁺AsF₆⁻ [75482-17-6], was identified as a component of the Friedel-Crafts reaction of C₆H₆ with S₂C₁₂. Similar compds., of formula ArSPh₂⁺AsF₆⁻ (e.g., Ar = p-PhOC₆H₄, m-PhSC₆H₄, and p-PhSO₂C₆H₄) and cyclic analogs (e.g., S-phenyldibenzothiophenium hexafluoroarsenate [82617-08-1]), were also prep'd. and characterized. Other classes (e.g., dialkylphenacylsulfonium salts, ArCOCH₂SR₂⁺X⁻) are also described; one class, characterized by 4-hydroxy-3,5-dimethoxyphenyldimethylsulfonium hexafluorophosphate [95896-72-3], is esp. suited as thermal initiators. The activities of the initiators were tested in the cationic polymns. of limonene dioxide, cyclohexene

oxide, and styrene oxide.

IT 95896-72-3

RL: USES (Uses)

(thermal initiators, for cationic polymn. of epoxides)

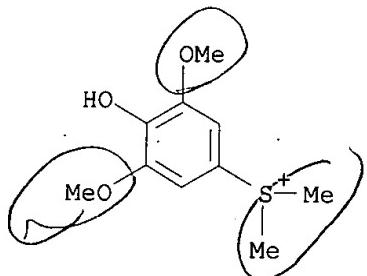
RN 95896-72-3 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7

CMF C10 H15 O3 S

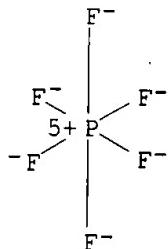


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L20 ANSWER 24 OF 47 HCA COPYRIGHT 2003 ACS

101:191034 Kinetic carbon acidity and features of the transfer of electronic effects in dimethylphenylsulfonium salts. Tupitsyn, I. F.; Zatsepina, N. N. (Gos. Inst. Prikl. Khim., Leningrad, USSR). Zhurnal Obshchey Khimii, 54(7), 1648-56 (Russian) 1984. CODEN: ZOKHA4. ISSN: 0044-460X.

AB IR and NMR spectral data for RC₆H₄S+Me₂ClO₄⁻ (R = H, 3-Cl, 3-CF₃, 3-NO₂, 4-Me, 4-MeO, 4-Br, 4-NO₂) indicated that the effects of R were not transmitted through the S atom to the Me groups. A linear Hammett correlation was made of the rate consts. for H-D exchange in RC₆H₄S+(CD₃)₂ClO₄⁻ (same R). The electronic effect of R was transmitted through S in the transition state because the intermediate ylide becomes nearly coplanar.

IT 5556-65-0

RL: PRP (Properties)

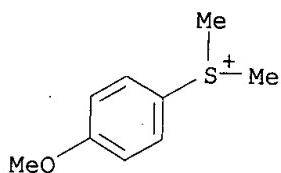
(hydrogen-deuterium exchange in, kinetics of)

RN 5556-65-0 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

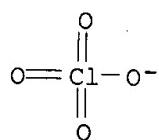
CM 1

CRN 45946-58-5
 CMF C9 H13 O S



CM 2

CRN 14797-73-0
 CMF Cl O4



L20 ANSWER 25 OF 47 HCA COPYRIGHT 2003 ACS

98:73390 Aromatic vinyl polyethers and molding compositions based on them.
 Crivello, James Vincent (General Electric Co., USA). Fr. Demande FR

2501697 A1 19820917, 35 pp. (French). CODEN: FRXXBL.

APPLICATION: FR 1982-3985 19820310. PRIORITY: US 1981-243302 19810313.

AB Thermosetting molding compns...contain vinyl-terminated arom. polyethers or their reaction products with active H compds., arom. iodonium or sulfonium salt catalysts, and org.-reducing agents or Cu salts sol. in polyethers (0.1-10 parts/part onium salt). Thus, a mixt. of bisphenol A bis(2-vinyloxyethyl) ether [52411-04-8] (prepd. from bisphenol A [80-05-7], CH₂:CHOCH₂CH₂Cl [110-75-8], and NaOH in DMSO at 70-75.degree.) 40, SiO₂ (particle size 0.044 mm) 86, Ph₂I⁺ PF₆⁻ [58109-40-3] 0.39, and Cu stearate [660-60-6] 0.156 parts was molded at 120.degree. and 914 kg/cm² for 2 min to give a cured, hard, solid sheet. There was no curing with Epon 825 in place of the vinyl ether.

IT 73981-26-7

RL: CAT (Catalyst use); USES (Uses)

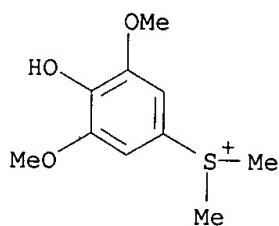
(catalysts, for crosslinking of vinyl polyethers by heat)

RN 73981-26-7 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

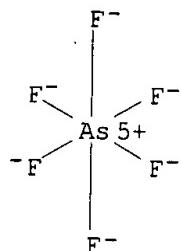
CM 1

CRN 64579-19-7
 CMF C10 H15 O3 S



CM 2

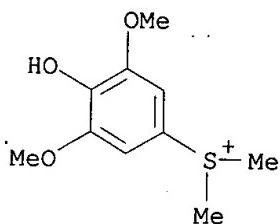
CRN 16973-45-8
 CMF As F6
 CCI CCS



- L20 ANSWER 26 OF 47 HCA COPYRIGHT 2003 ACS
 97:93470 Heat-curable compositions containing sulfonium salts. Crivello,
 James V. (General Electric Co., USA). U.S. US 4336363 A 19820622
 , 7 pp. Cont.-in-part of U.S. 4,230,814. (English). CODEN: USXXAM.
 APPLICATION: US 1980-195322 19801009. PRIORITY: US 1979-11102 19790212.
 AB Heat-curable compns. comprise epoxy resins, vinyl ethers, or phenolic
 resins contg., as catalysts, mixts of aryl sulfonium salts and oxidants,
 e.g. org. peroxides or azonitriles. Thus, dimethyl 4-hydroxy-3,5-
 dimethoxyphenylsulfonium hexafluoroarsenate [73981-26-7] 3,
 Bz2O2 3, and Epon 828-[25068-38-6] 94 parts were mixed and heated to
 160.degree.. The compn. gelled and hardened in 2.5 min.
 IT 73981-26-7
 RL: USES (Uses)
 (curing agents, contg. oxidants, for epoxy, vinyl, and phenolic resins)
 RN 73981-26-7 HCA
 CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-)
) (9CI) (CA INDEX NAME)

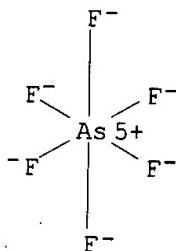
CM 1

CRN 64579-19-7
 CMF C10 H15 O3 S



CM 2

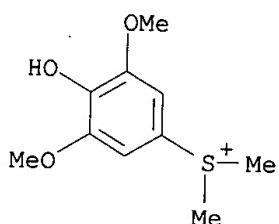
CRN 16973-45-8
 CMF As F6
 CCI CCS



- L20 ANSWER 27 OF 47 HCA COPYRIGHT 2003 ACS
 96:218827 Cationically curable organic resin compositions containing sulfonium salts and an organic oxidant. Crivello, James V. (General Electric Co., USA). Can. CA 1118936 A1 **19820223**, 23 pp. (English). CODEN: CAXXA4. APPLICATION: CA 1980-353451 19800605.
- AB** Certain dialkylhydroxyarylsulfonium salts in combination with oxidants and accelerators are good curing agents for cationically curable resins. Thus, 3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate [2386-87-0] contg. 3% dimethyl-4-hydroxy-3,5-dimethoxyphenylsulfonium hexafluoroarsenate [73981-26-7] was stirred with peracetic acid [79-21-0] soln. in PhMe contg. apprx. 0.5% Co naphthenate. On standing under ambient conditions, a hard crosslinked mass was obtained in 5 min.
- IT** **73981-26-7**
 RL: USES (Uses)
 (curing agents, contg. oxidants, for cationically curable resins)
- RN** 73981-26-7 HCA
CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7
 CMF C10 H15 O3 S

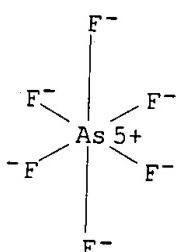


CM 2

CRN 16973-45-8

CMF As F6

CCI CCS



L20 ANSWER 28 OF 47 HCA COPYRIGHT 2003 ACS

96:200826 Heat-curable composition containing a dialkyl(hydroxyaryl)sulfonium salt and an organic oxidant. Crivello, James V. (General Electric Co., USA). Can. CA 1118550 A1 19820216, 17 pp. (English). CODEN: CAXXA4. APPLICATION: CA 1980-352598 19800523.

AB Heat-curable resin compns. comprise a cationically polymerizable resin, e.g. epoxy, an effective amt. of a curing agent consisting of a dialkyl(hydroxyaryl)sulfonium salt, and an oxidizing agent. Thus, dimethyl(4-hydroxy-3,5-dimethoxyphenyl)sulfonium hexafluoroarsenate [73981-26-7] 3, benzoyl peroxide [94-36-0] 3, and Epon 828 [25068-38-6] 94 parts were heated to 160.degree.. The compn. gelled and hardened in 2.5 min.

IT 73981-26-7

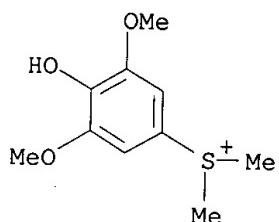
RL: PEP (Physical, engineering or chemical process); PROC (Process) (curing agents, for epoxy resins)

RN 73981-26-7 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7
CMF C10 H15 O3 S

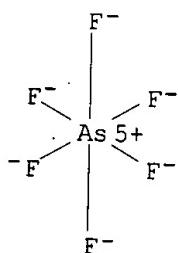


CM 2

CRN 16973-45-8

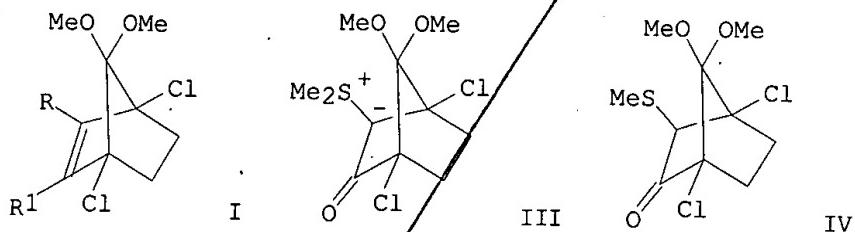
CMF As F6

CCI CCS



L20 ANSWER 29 OF 47 HCA COPYRIGHT 2003 ACS
 96:161791 Synthesis and reactions of disulfonium salts in the
 bicyclo[2.2.1]heptene series. Seitz, Gunther; Polier, Siegfried
 (Pharm.-Chem. Inst., Philipps-Univ. Marburg, Marburg/Lahn, D-3550, Fed.
 Rep. Ger.). Archiv der Pharmazie (Weinheim, Germany), 315(2), 169-74
 (German) 1982. CODEN: ARPMAS. ISSN: 0365-6233.

GI



AB Nucleophilic replacement of the vinylic Cl atoms in I ($R = R_1 = Cl$) by MeS^- gives I ($R = R_1 = MeS$), which is alkylated by $Me_3S^+ BF_4^-$ to give I ($R = R_1 = Me_2S^+ BF_4^-$). With nucleophiles, such as amines or H_2O , dealkylation of II to give I ($R = MeS$, $R_1 = MeS$, $Me_2S^+ BF_4^-$) takes place; treatment with $NaOMe$ or $NaOH$ leads to I ($R = Me_2S^+ BF_4^-$, $R_1 = MeO$) or III. On heating, III gives IV or rearranges to I ($R = MeS$, $R_1 = MeO$), depending on the reaction conditions.

IT 81468-64-6P

Sin Lee

09/966, 958

07/08/2003

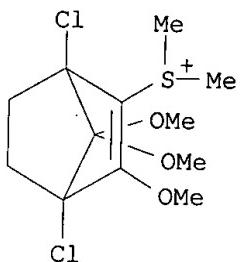
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 81468-64-6 HCA

CN Sulfonium, (1,4-dichloro-3,7,7-trimethoxybicyclo[2.2.1]hept-2-en-2-yl)dimethyl-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

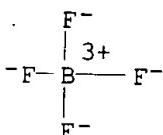
CM 1

CRN 81468-63-5
CMF C12 H19 Cl2 O3 S



CM 2

CRN 14874-70-5
CMF B F4
CCI CCS



L20 ANSWER 30 OF 47 HCA COPYRIGHT 2003 ACS
95:151230 Photosensitized cationic polymerizations using
dialkylphenacylsulfonium and dialkyl(4-hydroxyphenyl)sulfonium salt
photoinitiators. Crivello, J. V.; Lee, J. L. (Gen. Electric Co.,
Schenectady, NY, 12301, USA). Macromolecules, 14(5), 1141-7 (English)
1981. CODEN: MAMOBX. ISSN: 0024-9297.

AB Arom. hydrocarbons photosensitize the photolysis of
dialkylphenacylsulfonium salts while aryl ketones photosensitize the
photolysis of dialkyl-4-hydroxyphenylsulfonium salts. These
photosensitizer-photoinitiator combinations allow long-wavelength (>320
nm) UV light cationic photopolyrn. The relative efficiencies of various
photosensitizer-photoinitiator combinations are compared in the
photopolyrn. of limonene dioxide [96-08-2]. Several mechanisms for the
photosensitization are proposed, and their relative merits are discussed.
73981-26-7

IT RL: CAT (Catalyst use); USES (Uses)
(catalysts, for cationic photochem. polymn. of limonene dioxide)

RN 73981-26-7 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-)
(9CI) (CA INDEX NAME)

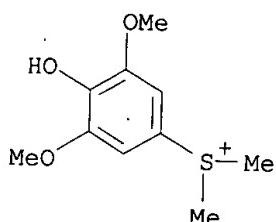
CM 1

Sin Lee

09/966, 958

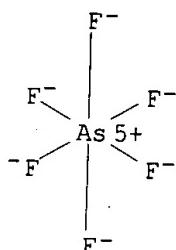
07/08/2003

CRN 64579-19-7
CMF C10 H15 O3 S



CM 2

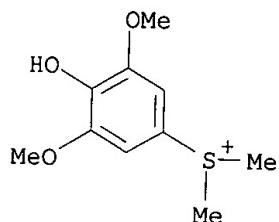
CRN 16973-45-8
CMF As F6
CCI CCS



- L20 ANSWER 31 OF 47 HCA COPYRIGHT 2003 ACS
94:31632 Thermosetting compositions. Crivello, James Vincent (General Electric Co., UK). PCT Int. Appl. WO 8001723 19800821, 21 pp.
(English). CODEN: PIXXD2. APPLICATION: WO 1980-US97 19800201.
AB Thermosetting compns. useful as molding or coating compns. comprise a cationically polymerizable compd., a dialkyl hydroxyarylsulfonium salt, and an org. oxidant. Thus, dimethyl(4-hydroxy-3,5-dimethoxyphenyl)sulfonium hexafluoroarsenate [73981-26-7] 3, Bz202 3, and Epon 828 [25068-38-6] 94 parts were mixed and heated to 160.degree.. The mixt. gelled and hardened within 2.5 min.
IT 73981-26-7
RL: USES (Uses)
(curing agents, for cationically polymerizable materials)
RN 73981-26-7 HCA
CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7
CMF C10 H15 O3 S

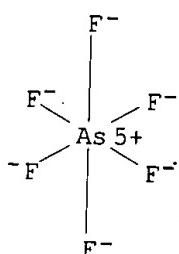


CM 2

CRN 16973-45-8

CMF As F6

CCI CCS



L20 ANSWER 32 OF 47 HCA COPYRIGHT 2003 ACS

94:4634 Curable organic resin compositions and foaming method. Crivello, James Vincent (General Electric Co., USA). PCT Int. Appl. WO 8001695 19800821, 29 pp. (English). CODEN: PIXXD2. APPLICATION: WO 1980-US96 19800201.

AB The title compns. comprise a curable resin (e.g., epoxy resin), a dialkyl hydroxyarylsulfonium salt, and org. oxidants (e.g., iodoso arom. esters). Thus, 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexene carboxylate polymer [25085-98-7] 10, 2,3-dichloro-5,6-dicyano-1,4-benzoquinone [84-58-2] 0.15, and dimethyl-4-hydroxy-3,5-dimethoxyphenylsulfonium hexafluoroarsenate [73981-26-7] 0.15 part were stirred under ambient conditions and allowed to rest. Gelation occurred after 5 min.

IT 73981-26-7

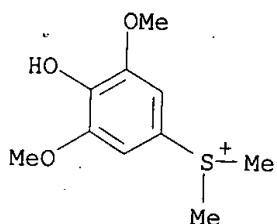
RL: CAT (Catalyst use); USES (Uses)
(crosslinking catalysts, for epoxy resins)

RN 73981-26-7 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

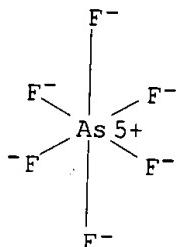
CM 1

CRN 64579-19-7
CMF C10 H15 O3 S



CM 2

CRN 16973-45-8
 CMF As F6
 CCI CCS



L20 ANSWER 33 OF 47 HCA COPYRIGHT 2003 ACS
 93:113550 The generation and electrophilic reactions of dimethyl sulfide cation radicals. Chow, Yuan L.; Iwai, Kiyoshi (Dep. Chem., Simon Fraser Univ., Burnaby, BC, V5A 1S6, Can.). Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (1972-1999) (6), 931-6 (English) 1980. CODEN: JCPKBF. ISSN: 0300-9580.

AB NOBF₄ and Me₂S reacted in anhyd. CH₂C₁₂ to give a red-brown soln. stable at -70.degree. which decompd. slowly at .apprx.-20.degree. to give Me₃S⁺ BF₄⁻. The red-brown soln. reacted with olefins to give 2-nitrosoalkyldimethylsulfonium salts and/or 1,2-bis(sulfonium) salts, and with PhOMe to give p-MeOC₆H₄S⁺Me₂. These reactions involve electrophilic Me₂S.bul.+ as a reactive intermediate leading to attack on the .pi.-bond systems followed by radical combination or electron transfer-elimination to complete the addn. and substitution pathways.

IT 74633-71-9P

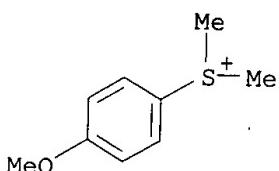
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepns. of)

RN 74633-71-9 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5
CMF C9 H13 O S

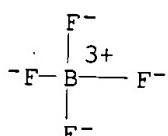


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



L20 ANSWER 34 OF 47 HCA COPYRIGHT 2003 ACS

93:8595 Photoinitiated cationic polymerization by dialkyl-4-hydroxyphenylsulfonium salts. Crivello, J. V.; Lam, J. H. W. (Res. Dev. Cent., Gen. Electr. Corp., Schenectady, NY, 12301, USA). Journal of Polymer Science, Polymer Chemistry Edition, 18(3), 1021-34 (English) 1980. CODEN: JPLCAT. ISSN: 0449-296X.

AB UV irradn. of dialkyl-4-hydroxyphenylsulfonium salts (with nonnucleophilic anions such as BF₄⁻, AsF₆⁻, PF₆⁻, and SbF₆⁻) undergo reversible photodissocn. to generate ylids and Broensted acids which were capable of initiating cationic polymn. of cyclohexene oxide [286-20-4], s-trioxane [110-88-3], or 2-chloroethyl vinyl ether [110-75-8].

IT 73981-26-7

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for cationic photopolymn., mechanism in relation to)

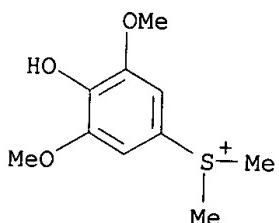
RN 73981-26-7 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, hexafluoroarsenate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7

CMF C10 H15 O3 S



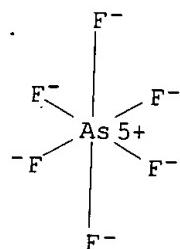
CM 2

Sin Lee

09/966, 958

07/08/2003

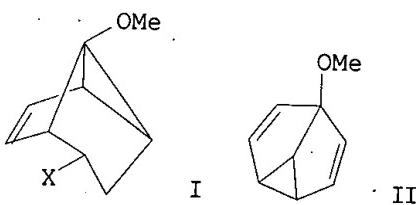
CRN 16973-45-8
CMF As F₆
CCI CCS



L20 ANSWER 35 OF 47 HCA COPYRIGHT 2003 ACS

92:22130 5-Methoxysemibullvalene. Hoffmann, Reinhard W.; Hauel, Norbert; Frickel, Fritz; Kempf, Manfred; Kessler, Horst (Fachber. Chem., Univ. Marburg, Marburg, D-3550, Fed. Rep. Ger.). Chemische Berichte, 112(8), 2894-902 (German) 1979. CODEN: CHBEAM. ISSN: 0009-2940.

GI



AB Reaction of 8,8-dimethoxytricyclo[3.2.1.0_{2,4}]oct-6-ene with Al halides gave rearranged dihydrosemibullvalenes I (X = Cl, Br, iodo), which are converted into 5-methoxysemibullvalene (II).

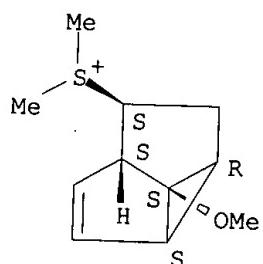
IT 62962-16-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and elimination reaction of)

RN 62962-16-7 HCA

CN Sulfonium, (1,2,2a,2b,4a,4b-hexahydro-4b-methoxycyclopropa[cd]pentalen-1-yl)dimethyl-, iodide, (1.alpha.,2a.alpha.,2b.alpha.,4a.alpha.,4b.alpha.)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

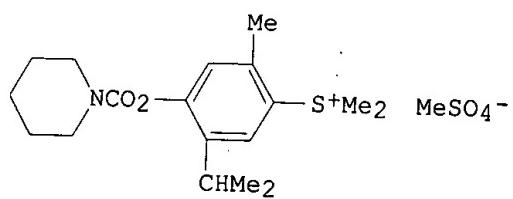
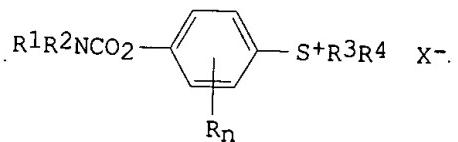


● I-

L20 ANSWER 36 OF 47 HCA COPYRIGHT 2003 ACS

90:87030 Carbamoyloxyphenyl compounds. Garrod, John Frederick; Brookes, Robert Frederick; Copping, Leonard George; Greenwood, Douglas (Boots Co. Ltd., UK). Ger. Offen. DE 2814453 19781019, 35 pp. (German).
CODEN: GWXXBX. APPLICATION: DE 1978-2814453 19780404.

GI



AB Sixty-five sulfonylophenyl carbamates I (R = alkyl, alkoxy, halo; R^1, R^2 = aliph., cycloalkyl, optionally substituted phenyl; $\text{R}^1\text{R}^2\text{N}$ = heterocyclil; R^3, R^4 = Me, Et; X = anion; $n = 0-3$), useful as plant growth regulators, were prep'd. by 4 methods. Thus, SO_2Cl_2 was added to thymol, Me_2S_2 , and CHCl_3 over 2.5 h at -5 to 0 degree., the mixt. stirred 1 h at 10 degree. and warmed 2 h to 60 degree., and the product 5,2,4-Me(Me₂CH)(MeS)₂ $\text{C}_6\text{H}_2\text{OH}$ esterified with 1-piperidinecarbonyl chloride in pyridine 24 h to give the corresponding piperidinecarboxylate. This was treated with Me_2SO_4 5 h to give the sulfonium salt II. I, at 100 ppm, restricted the growth of sunflower and mungo beans .gt; or eq. 25%, as compared with controls.

IT 68721-22-2 68722-84-9 68722-86-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(prep'n. as plant growth inhibitor)

RN 68721-22-2 HCA

CN Sulfonium, [5-chloro-4-[(dimethylamino)carbonyl]oxy]-2-methoxyphenyl]dimethyl-, methyl sulfate (9CI) (CA INDEX NAME)

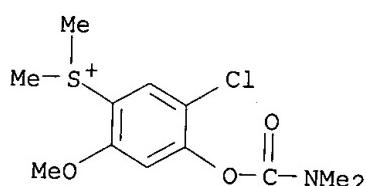
CM 1

Sin Lee

09/966, 958

07/08/2003

CRN 68721-21-1
CMF C12 H17 Cl N O3 S



CM 2

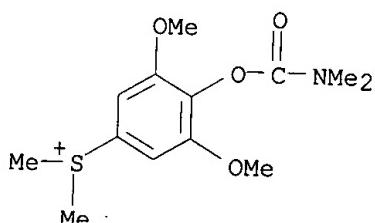
CRN 21228-90-0
CMF C H3 O4 S

Me-O-SO3-

RN 68722-84-9 HCA
CN Sulfonium, [4-[[[dimethylamino]carbonyl]oxy]-3,5-dimethoxyphenyl]dimethyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 68722-83-8
CMF C13 H20 N O4 S



CM 2

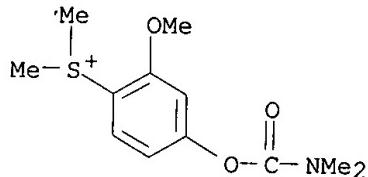
CRN 21228-90-0
CMF C H3 O4 S

Me-O-SO3-

RN 68722-86-1 HCA
CN Sulfonium, [4-[[[dimethylamino]carbonyl]oxy]-2-methoxyphenyl]dimethyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 68722-85-0
CMF C12 H18 N O3 S



CM 2

CRN 21228-90-0
CMF C H3 O4 SMe-O-SO₃⁻

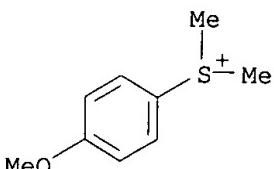
L20 ANSWER 37 OF 47 HCA COPYRIGHT 2003 ACS

89:23960 Arylsulfonium salts. Winkler, Adolf (Bayer A.-G., Fed. Rep. Ger.).
Ger. Offen. DE 2644591 19780406, 45 pp. (German). CODEN:
GWXXBX. APPLICATION: DE 1976-2644591 19761002.AB Arylsulfonium salts were prepd. by heating RH₂SO (R = arom., heteroarom) with R₁R₂SO (R₁, R₂ = aliph., arom.; SR₁R₂ = heterocyclic) in HF. Thus equimolar amts. of PhMe, Me₂SO and HF were heated to 70.degree. for 10 h to give 4-MeC₆H₄SMe + Me₂ClO₄, which was heated with KOH to give 4-MeC₆H₄SM₂.IT 5556-65-0P 5556-66-1P 19349-48-5P
19349-49-6P 66623-58-3P 66623-60-7P
66623-62-9P 66623-70-9P 66623-74-3P
66623-89-0P 66623-93-6P 66786-85-4PRL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and decompr. of)

RN 5556-65-0 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5
CMF C9 H13 O S

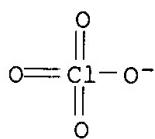
CM 2

CRN 14797-73-0
CMF Cl O4

Sin Lee

09/966, 958

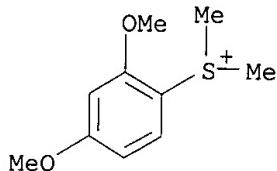
07/08/2003



RN 5556-66-1 HCA
CN Sulfonium, (2,4-dimethoxyphenyl)dimethyl-, perchlorate (8CI, 9CI) (CA INDEX NAME)

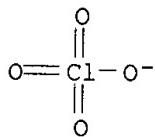
CM 1

CRN 46178-78-3
CMF C10 H15 O2 S



CM 2

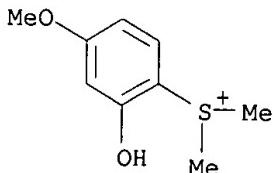
CRN 14797-73-0
CMF Cl O4



RN 19349-48-5 HCA
CN Sulfonium, (2-hydroxy-4-methoxyphenyl)dimethyl-, perchlorate (salt) (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 46029-21-4
CMF C9 H13 O2 S



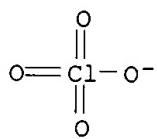
CM 2

CRN 14797-73-0
CMF Cl O4

Sin Lee

09/966, 958

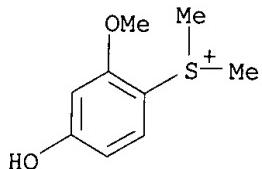
07/08/2003



RN 19349-49-6 HCA
CN Sulfonium, (4-hydroxy-2-methoxyphenyl)dimethyl-, perchlorate (salt) (8CI, 9CI) (CA INDEX NAME)

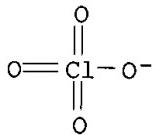
CM 1

CRN 46035-14-7
CMF C9 H13 O2 S



CM 2

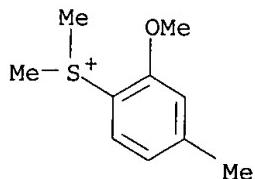
CRN 14797-73-0
CMF Cl O4



RN 66623-58-3 HCA
CN Sulfonium, (2-methoxy-4-methylphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 66623-57-2
CMF C10 H15 O S



CM 2

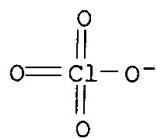
CRN 14797-73-0

Sin Lee

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07/08/2003

CMF Cl O4



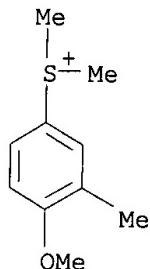
RN 66623-60-7 HCA

CN Sulfonium, (4-methoxy-3-methylphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 66623-59-4

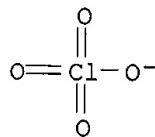
CMF C10 H15 O S



CM 2

CRN 14797-73-0

CMF Cl O4



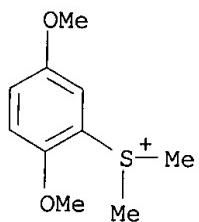
RN 66623-62-9 HCA

CN Sulfonium, (2,5-dimethoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

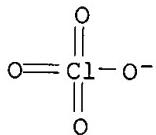
CM 1

CRN 66623-61-8

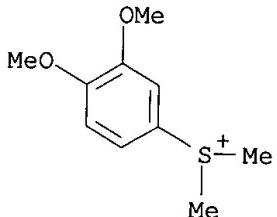
CMF C10 H15 O2 S



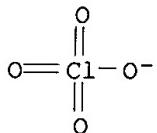
CM 2

CRN 14797-73-0
CMF Cl O4RN 66623-70-9 HCA
CN Sulfonium, (3,4-dimethoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 66623-69-6
CMF C10 H15 O2 S

CM 2

CRN 14797-73-0
CMF Cl O4RN 66623-74-3 HCA
CN Sulfonium, (2-fluoro-4-methoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

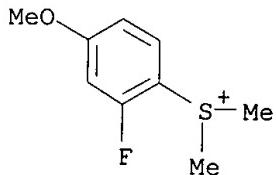
Sin Lee

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07/08/2003

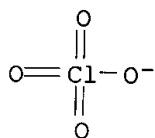
CM 1

CRN 66623-73-2
CMF C9 H12 F O S



CM 2

CRN 14797-73-0
CMF Cl O4

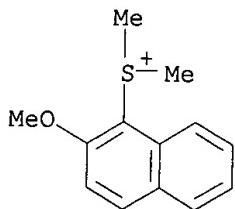


RN 66623-89-0 HCA

CN Sulfonium, (2-methoxy-1-naphthalenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

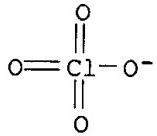
CM 1

CRN 66623-88-9
CMF C13 H15 O S



CM 2

CRN 14797-73-0
CMF Cl O4

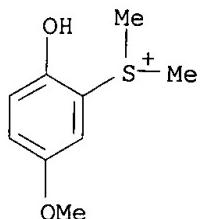


RN 66623-93-6 HCA

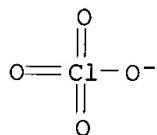
CN Sulfonium, (2-hydroxy-5-methoxyphenyl)dimethyl-, perchlorate (salt) (9CI)

(CA INDEX NAME)

CM 1

CRN 46057-61-8
CMF C9 H13 O2 S

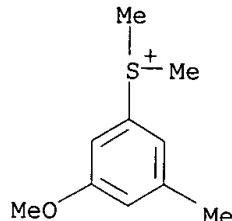
CM 2

CRN 14797-73-0
CMF Cl O4

RN 66786-85-4 HCA

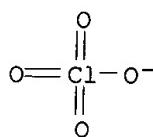
CN Sulfonium, (3-methoxy-5-methylphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 66786-84-3
CMF C10 H15 O S

CM 2

CRN 14797-73-0
CMF Cl O4



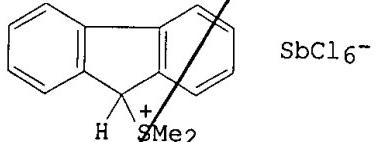
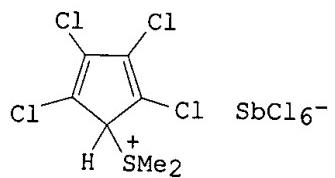
L20 ANSWER 38 OF 47 HCA COPYRIGHT 2003 ACS

87:183529 Chemical studies on the reactivity of chlorosulfonium salts.

Neidlein, Richard; Stackebrandt, Bernd (Pharm.-Chem. Inst., Univ.

Karlsruhe, Karlsruhe, Fed. Rep. Ger.). *Justus Liebigs Annalen der Chemie* (6), 914-23 (German) 1977. CODEN: JLACBF. ISSN: 0075-4617.

GI



SbCl_6^-

AB The reactivity of Me_2SCl^+ - SbCl_6^- toward various reagents was investigated. Several sulfonium salts (e.g., I and II) were prep'd.

IT 38966-44-8P 64579-20-0P

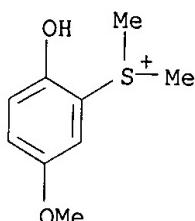
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 38966-44-8 HCA

CN Sulfonium, (2-hydroxy-5-methoxyphenyl)dimethyl-, (OC-6-11)-hexachloroantimonate(1-) (9CI) (CA INDEX NAME)

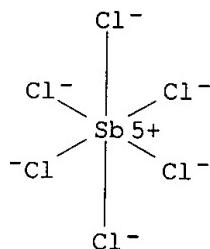
CM 1

CRN 46057-61-8
CMF C9 H13 O2 S



CM 2

CRN 17949-89-2
CMF C16 Sb
CCI CCS



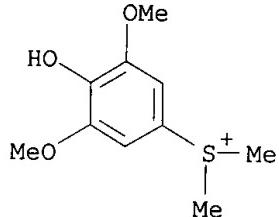
RN 64579-20-0 HCA

CN Sulfonium, (4-hydroxy-3,5-dimethoxyphenyl)dimethyl-, (OC-6-11)-hexachloroantimonate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 64579-19-7

CMF C10 H15 O3 S

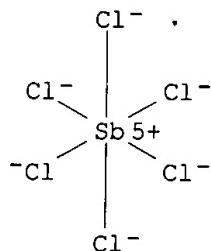


CM 2

CRN 17949-89-2

CMF C16 Sb

CCI CCS



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87:134348 Reactions of S-methyl thiobenzoate with methyl triflate and magic methyl. Formation of benzoic trifluoromethanesulfonic anhydride and benzyldimethylsulfonium ion. Minato, Hiroshi; Miura, Takashi; Kobayashi, Michio (Dep. Chem., Tokyo Metrop. Univ., Tokyo, Japan). Chemistry Letters (6), 609-14 (English) 1977. CODEN: CMLTAG. ISSN: 0366-7022.

AB The reactions of S-Me thiobenzoate with Me triflate and Me fluorosulfate yielded benzoic trifluoromethanesulfonic anhydride and benzyldimethylsulfonium ion, resp.; both of these intermediates worked as powerful benzoylating agents for an arene, amine, alc., and phenol.

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07/08/2003

IT 6081-83-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

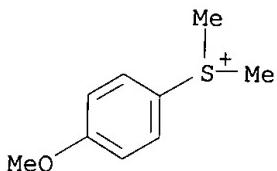
RN 6081-83-0 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, (OC-6-11)-hexachloroantimonate(1-)
(9CI) (CA INDEX NAME)

CM 1

CRN 45946-58-5

CMF C9 H13 O S

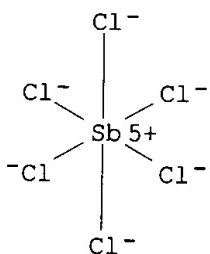


CM 2

CRN 17949-89-2

CMF Cl6 Sb

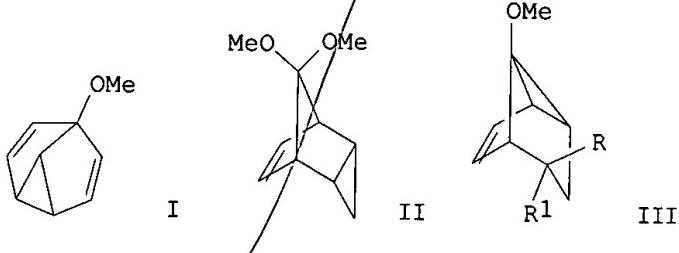
CCI CCS



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87:84597 5-Methoxy-semibullvalene. Hoffmann, Reinhard W.; Hauel, Norbert;
Frickel, Fritz (Fachber. Chem., Univ. Marburg/Lahn, Marburg, Fed. Rep.
Ger.). Angewandte Chemie, 89(7), 491-2 (German) 1977. CODEN:
ANCEAD. ISSN: 0044-8249.

GI



AB The title compd. I, having an electron-donating substituent, was prep'd. from II. Ring opening of II with Et₂AlCl gave 90% III (R = H, R₁ = Cl), which reacted with excess NaSMe to give III (R = SMe, R₁ = H) (IV). Methylation of IV with MeI gave III (R = Me₂S⁺, R₁ = H), which was treated with KOCMe₃ to give I.

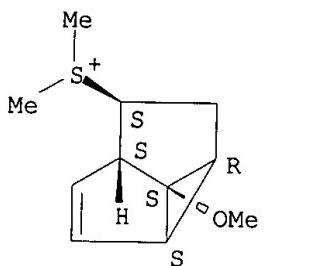
IT **62962-16-7p**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and elimination reaction of)

RN 62962-16-7 HCA

CN Sulfonium, (1,2,2a,2b,4a,4b-hexahydro-4b-methoxycyclopropa[cd]pentalen-1-yl)dimethyl-, iodide, (1.alpha.,2a.alpha.,2b.alpha.,4a.alpha.,4b.alpha.)-(9CI) (CA INDEX NAME)

Relative stereochemistry.



● I⁻

L20 ANSWER 41 OF 47 HCA COPYRIGHT 2003 ACS

80:46988 Racemization of sulfonium salts. III. Racemization of arylsulfonium salts. Darwish, David; Scott, Christopher E. (Dep. Chem., Univ. Alberta, Edmonton, AB, Can.). Canadian Journal of Chemistry, 51(21), 3647-8 (English) 1973. CODEN: CJCHAG. ISSN: 0008-4042.

AB The rate consts. for racemization by inversion of a variety of monoaryl- and diaryl-sulfonium perchlorate salts are reported. There is a marked steric effect on the rate of the racemization reaction. An est. is made of the half-life for racemization of acyclic optically active triarylsulfonium salts.

IT **51210-66-3 51262-29-4**

RL: RCT (Reactant); RACT (Reactant or reagent)
(racemization of, kinetics of)

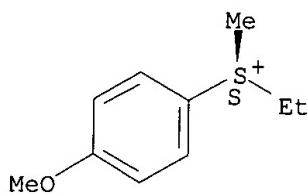
RN 51210-66-3 HCA

CN Sulfonium, ethyl(4-methoxyphenyl)methyl-, (S)-, perchlorate (9CI) (CA INDEX NAME)

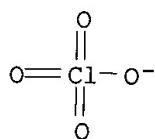
CM 1

CRN 51210-65-2
CMF C10 H15 O₂ S

Absolute stereochemistry.



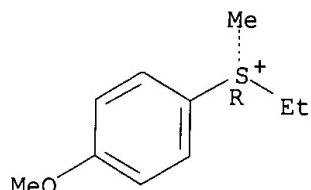
CM 2

CRN 14797-73-0
CMF Cl O4RN 51262-29-4 HCA
CN Sulfonium, ethyl(4-methoxyphenyl)methyl-, (R)-, perchlorate (9CI) (CA INDEX NAME)

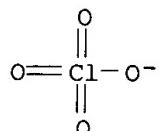
CM 1

CRN 51262-28-3
CMF C10 H15 O S

Absolute stereochemistry.



CM 2

CRN 14797-73-0
CMF Cl O4L20 ANSWER 42 OF 47 HCA COPYRIGHT 2003 ACS
78:83720 Organic sulfur compounds. XXXVII. Oxosulfonium salts. I.
Preparation and physical properties. Kobayashi, Michio; Kamiyama, Kenji;

Minato, Hiroshi; Oishi, Yukio; Takada, Yoko; Hattori, Yoshitaka (Dep. Chem., Tokyo Metrop. Univ., Tokyo, Japan). Bulletin of the Chemical Society of Japan, 45(12), 3703-6 (English) 1972. CODEN: BCSJA8. ISSN: 0009-2673.

AB Methods for prepn. and physical properties of oxosulfonium salts were discussed. Optically active ethylmethylphenyloxosulfonium salts were prep'd. and their absolute configurations were detd.

IT **41099-69-8P**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. and spectrum of)

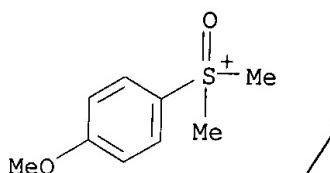
RN 41099-69-8 HCA

CN Sulfoxonium, (4-methoxyphenyl)dimethyl-, triiodomercurate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 48126-66-5

CMF C9 H13 O2 S

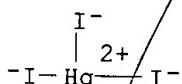


CM 2

CRN 19964-11-5

CMF Hg I3

CCI CCS



L20 ANSWER 43 OF 47 HCA COPYRIGHT 2003 ACS

77:151600 Formation of dimethylhydroxyphenylsulfonium salt. Claus, P.; Rieder, W. (Univ. Wien, Vienna, Austria). Tetrahedron Letters (37), 3879-82 (German) 1972. CODEN: TELEAY. ISSN: 0040-4039.

GI For diagram(s), see printed CA Issue.

AB Phenylsulfonium salts (I, R = H, Me; R1 = H, OMe; X = FeCl6, Cl, HSO4) were prep'd. by the reaction of phenols with R2S+Cl X- and formed the phenols (II) by hydrolysis or thermolysis. The prepn. of R2S+X- by various methods was discussed. Eight II (R = H, Me, CMe3, OMe; R1 = H, Me) were prep'd.

IT **38966-43-7P 38966-44-8P**

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)

RN 38966-43-7 HCA

CN Sulfonium, (2-hydroxy-3-methoxy-5-methylphenyl)dimethyl-, (OC-6-11)-hexachloroantimonate(1-) (9CI) (CA INDEX NAME)

CM 1

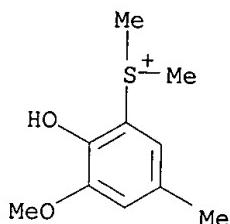
CRN 46172-50-3

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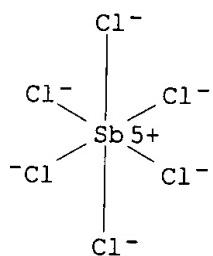
07/08/2003

CMF C10 H15 O2 S



CM 2

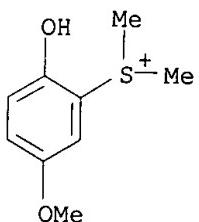
CRN 17949-89-2
CMF C16 Sb
CCI CCS



RN 38966-44-8 HCA
CN Sulfonium, (2-hydroxy-5-methoxyphenyl)dimethyl-, (OC-6-11)-hexachloroantimonate(1-) (9CI) (CA INDEX NAME)

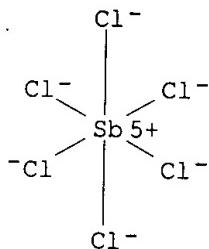
CM 1

CRN 46057-61-8
CMF C9 H13 O2 S



CM 2

CRN 17949-89-2
CMF C16 Sb
CCI CCS



L20 ANSWER 44 OF 47 HCA COPYRIGHT 2003 ACS

76:72167 Addition of thioethers to quinones and quinonimines in very acid media. Bosshard, H. (Zent. Forsch., Ciba-Geigy A.-G., Basel, Switz.). Helvetica Chimica Acta, 55(1), 32-7 (German) 1972. CODEN: HCACAV. ISSN: 0018-019X.

AB In strongly acid media p-benzoquinone adds thioethers to form the hydroquinonesulfonium salts $2,5\text{-}(\text{HO})_2\text{C}_6\text{H}_3\text{S}^+\text{RR}'\text{X}^-$ [I, R = R' = Me, Et, Pr, Bu, $\text{CH}_2\text{CH}_2\text{OEt}$; R = Me, R' = $\text{CH}_2\text{CH}_2\text{OH}$, Bu, Ph; (RR') = $(\text{CH}_2)_4$, $(\text{CH}_2)_6$, $(\text{CH}_2)_3\text{CHMe}$, $(\text{CH}_2)_2\text{O}(\text{CH}_2)_2$; X = Cl, Br, I, Reineckate, picrate]. I derivs. substituted in the 4-position by Me, Cl, PhS, $\text{Me}(\text{CH}_2)_1\text{S}$, naphthoquinone, \cdot omicron.-benzoquinone, and quinonimine derivs. were similarly obtained. The reaction procedes via the carbenium ion of the quinone and requires sufficient acidity for protonation of the quinone, but not too much for the protonation of the thioether. The reaction limits were 80% HCO_2H and 70% H_2SO_4 . HCl and HBr add to the protonated quinone and are unsuitable as solvents.

IT 28374-61-0P

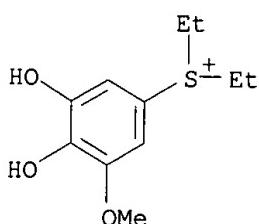
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 28374-61-0 HCA

CN Sulfonium, (3,4-dihydroxy-5-methoxyphenyl)diethyl-, salt with
2,4,6-trinitrophenol (1:1) (9CI) (CA INDEX NAME)

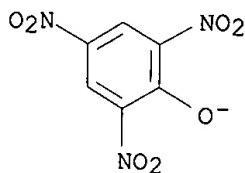
CM 1

CRN 46423-66-9
CMF C11 H17 O3 S



CM 2

CRN 14798-26-6
CMF C6 H2 N3 O7



L20 ANSWER 45 OF 47 HCA COPYRIGHT 2003 ACS

75:97954 Kinetics and mechanism of methyl transfer from sulfonium compounds to various nucleophiles. Coward, James K.; Sweet, William D. (Sch. Med., Yale Univ., New Haven, CT, USA). Journal of Organic Chemistry, 36(16), 2337-46 (English) 1971. CODEN: JOCEAH. ISSN: 0022-3263.

AB A series of substituted phenyldimethyl sulfonium perchlorates was prep'd. and the reaction of these compds. with nucleophiles investigated. With O nucleophiles in water, elevated temps. are required to effect methylation, whereas a slow reaction is obsd. with amines in water at 25.degree.. A large solvent effect assoc'd. with these reactions permits the convenient study of the methylation of amine nucleophiles in MeCN at 25.degree.. The values of ρ . obtained from Hammett plots of the kinetic data are similar, using either hydroxide ion, pyrrolidine, or BuNH2 as the added nucleophile. Activation parameters and data derived from various linear freeenergy relationships for the reaction of Me sulfonium compds. with nucleophiles are compared with data for the analogous reactions in which MeI acts as the methylating agent. These data are discussed in relation to enzyme-catalyzed transmethylations which use the sulfonium compd., S-adenosylmethionine, as the Me donor.

IT 5556-65-0

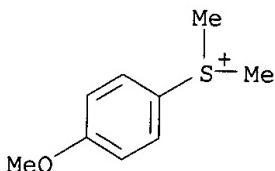
RL: RCT (Reactant); RACT (Reactant or reagent)
(demethylation of, by nucleophiles, kinetics of)

RN 5556-65-0 HCA

CN Sulfonium, (4-methoxyphenyl)dimethyl-, perchlorate (9CI) (CA INDEX NAME)

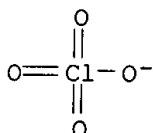
CM 1

CRN 45946-58-5
CMF C9 H13 O S



CM 2

CRN 14797-73-0
CMF Cl O4



L20 ANSWER 46 OF 47 HCA COPYRIGHT 2003 ACS

72:132303 Dihydroxyarylsulfonium salts. Busshard, Hans; Eder, Manfred (Geigy, J. R., A.-G.). Ger. Offen. DE 1951803 19700423, 37 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1969-1951803 19691014.

GI For diagram(s), see printed CA Issue.

AB The title compds. (I, II, and III) were prep'd. by treating the corresponding quinones with org. sulfides, RSR₁, in strongly acidic medium (pH <1) at low temps. and subsequent addn. of HK. Among 30 compds. prep'd. were I (R₂ = R₃ = H) (R, R₁, X, and % yield given): Et, Et, Cl, 93; Me, Me, Cl, 92. Also II (R, R₁, X, and % yield given): Bu, Bu, Cl, -; Bu, Bu, reineckate, 89. Also III (X and % yield given): reineckate, 69; picrate, -.

IT 28374-61-0P 28659-51-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

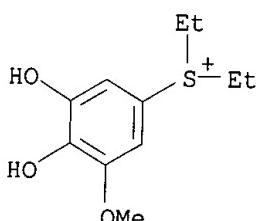
RN 28374-61-0 HCA

CN Sulfonium, (3,4-dihydroxy-5-methoxyphenyl)diethyl-, salt with 2,4,6-trinitrophenol (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46423-66-9

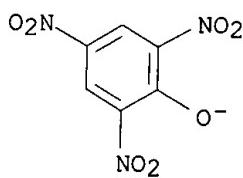
CMF C11 H17 O3 S



CM 2

CRN 14798-26-6

CMF C6 H2 N3 O7



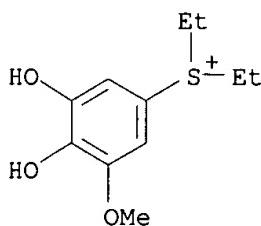
RN 28659-51-0 HCA

CN Sulfonium, (3,4-dihydroxy-5-methoxyphenyl)diethyl-, diamminetetrakis(isothiocyanato)chromate(1-) (8CI) (CA INDEX NAME)

CM 1

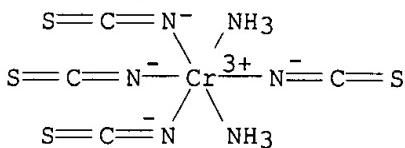
CRN 46423-66-9

CMF C11 H17 O3 S



CM 2

CRN 16248-93-4
 CMF C4 H6 Cr N6 S4
 CCI CCS



L20 ANSWER 47 OF 47 HCA COPYRIGHT 2003 ACS

69:43581 Reaction of phenol derivatives with sulfoxides. III. Synthesis and characterization of 2-alkylthio- and 2-arylthio-5-hydroxy-p-benzoquinones. Ukai, Shigeo; Hirose, Kazuo (Gifu Coll. Pharm., Gifu, Japan). Chemical & Pharmaceutical Bulletin, 16(2), 202-10 (English) 1968. CODEN: CPBTAL. ISSN: 0009-2363.

AB 2-Arylthio- or 2-alkylthio-5-hydroxy-p-benzoquinones were easily synthesized by the oxidn. of 4-arylthio- or 4-alkylthioresorcinols with K nitrodisulfonate. The thioresorcinols were prep'd. from the sulfonium perchlorates synthesized by the reaction of resorcinol with sulfoxides. The structure of these hydroxybenzoquinones was elucidated. Further, the Thiele addn. of Ac₂O to 2-arylthio- or 2-alkylthio-p-benzoquinones was examd. Only in the case of the arylthio compds. the Thiele reaction progressed smoothly to afford arylthiohydroxyhydroquinone triacetates. The position of the acetoxy group in these compounds (arylthiohydroxyhydroquinone triacetates) was detd. 17 references.

IT 19349-48-5P 19349-49-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)

RN 19349-48-5 HCA

CN Sulfonium, (2-hydroxy-4-methoxyphenyl)dimethyl-, perchlorate (salt) (8CI, 9CI) (CA INDEX NAME)

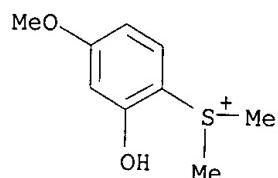
CM 1

CRN 46029-21-4
 CMF C9 H13 O2 S

Sin Lee

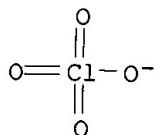
09/966, 958

07/08/2003



CM 2

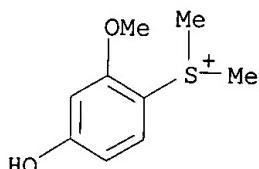
CRN 14797-73-0
CMF Cl O4



RN 19349-49-6 HCA
CN Sulfonium, (4-hydroxy-2-methoxyphenyl)dimethyl-, perchlorate (salt) (8CI,
9CI) (CA INDEX NAME)

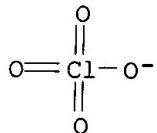
CM 1

CRN 46035-14-7
CMF C9 H13 O2 S



CM 2

CRN 14797-73-0
CMF Cl O4



=> file reg

FILE 'REGISTRY' ENTERED AT 11:03:34 ON 08 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> display history full 11-

FILE 'HCAPLUS' ENTERED AT 09:01:40 ON 08 JUL 2003

L1 60547 SEA LU ?/AU
L2 85 SEA NEISSER ?/AU OR NIESSER ?/AU
L3 218 SEA DAMMEL ?/AU OR DAMMELL ?/AU
L4 105533 SEA WU ?/AU
L5 1 SEA L1 AND L2 AND L3 AND L4
SEL L5 1 RN

FILE 'REGISTRY' ENTERED AT 09:02:07 ON 08 JUL 2003

L6 5 SEA (1879-16-9/BI OR 2052-49-5/BI OR 214149-84-5/BI OR
2923-28-6/BI OR 328060-50-0/BI)
L7 1 SEA L6 AND PMS/CI

FILE 'LREGISTRY' ENTERED AT 09:07:57 ON 08 JUL 2003

L8 STR

FILE 'REGISTRY' ENTERED AT 09:22:06 ON 08 JUL 2003

L9 SCR 2043
L10 2 SEA SSS SAM L8 AND L9
L11 STR L8
L12 11 SEA SSS SAM L11 AND L9
L13 STR L11
L14 18 SEA SSS SAM L13 AND L9
L15 653 SEA SSS FUL L13 AND L9
SAV L15 LEE958/A
E POLYVINYL ACETAL/CN
L16 3 SEA "POLYVINYL ACETAL BUTYRAL"/CN OR "POLYVINYL ACETALS"/CN
OR "POLYVINYL ACETALS, ACETAL BUTYRALS"/CN OR
"POLYVINYL ACETALS, ACETAL FORMALS"/CN
E POLYVINYL ALCOHOL ACETAL/CN
L17 0 SEA POLYVINYL##(L)ALCOHOL##(L)ACETAL#
E POLYVINYL ALCOHOL/CN
E POLY VINYL ALCOHOL/CN
E POLYVINYLALCOHOL/CN

FILE 'LCA' ENTERED AT 10:10:59 ON 08 JUL 2003

L18 6 SEA (POLYVINYL##(2A)(ALC# OR ALCOHOL#))/IT
D L18 1-6 KWIC

FILE 'REGISTRY' ENTERED AT 10:11:41 ON 08 JUL 2003

L19 1 SEA 9002-89-5
E FORMALDEHYDE/CN
L20 1 SEA FORMALDEHYDE/CN
E ACETALDEHYDE/CN

L21 1 SEA ACETALDEHYDE/CN
 E PROPAANOALDEHYDE/CN
 E PROPALDEHYDE/CN
L22 1 SEA PROPALDEHYDE/CN
 E BUTANAL/CN
L23 1 SEA BUTANAL/CN
 E PENTANAL/CN
L24 1 SEA PENTANAL/CN
L25 5 SEA L20 OR L21 OR L22 OR L23 OR L24

FILE 'HCAPLUS' ENTERED AT 10:19:27 ON 08 JUL 2003

L26 709 SEA L15
L27 150574 SEA PHOTORESIST? OR RESIST OR RESISTS OR PHOTOMASK? OR
 MASK?
L28 0 SEA L16
L29 3726 SEA L19/D OR L19/DP
L30 5966 SEA L25/D OR L25/DP
L31 32 SEA L26 AND L27

FILE 'REGISTRY' ENTERED AT 10:20:27 ON 08 JUL 2003

L32 416 SEA L15 AND 3/ELC.SUB

FILE 'HCAPLUS' ENTERED AT 10:20:54 ON 08 JUL 2003

L33 617 SEA L32
L34 27 SEA L33 AND L27
L35 79 SEA L29 AND L30
L36 5 SEA L35 AND L27
L37 72995 SEA POLYVINYLALC# OR POLYVINYLALCOHOL# OR POLYVINYL##(2A)
 (ALC# OR ALCOHOL##) OR (POLY OR POLYM# OR POLYMER? OR
 HOMOPOLYM# OR HOMOPOLYMER? OR RESIN?) (2A)VINYLI##(2A) (ALC#
 OR ALCOHOL##)
L38 51021 SEA L19
L39 163006 SEA FORMALDEHYDE# OR ACETALDEHYDE# OR METHANAL# OR
 ETHANAL# OR PROPANAL# OR BUTANAL#
L40 95437 SEA L25
L41 3077 SEA (L37 OR L38) AND (L39 OR L40)
L42 75 SEA L41 AND L27
L43 56512 SEA ACETAL#
L44 24 SEA L42 AND L43
L45 5 SEA L7
L46 5 SEA L36 NOT L45
L47 47 SEA (L34 OR L44) NOT (L46 OR L45)
L48 76136 SEA RESIST OR RESISTS OR PHOTORESIST?
L49 38 SEA L47 AND L48
L50 38 SEA L49 AND (1907-2001/PY OR 1907-2001/PRY)

FILE 'REGISTRY' ENTERED AT 10:36:08 ON 08 JUL 2003

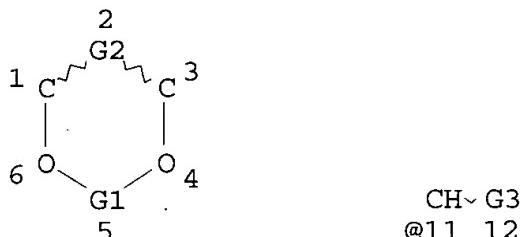
L51 99 SEA L32 AND 1/NC
L52 78 SEA L51 AND 1/NRS
L53 STR L13
L54 8 SEA SUB=L15 SSS SAM L53
L55 362 SEA SUB=L15 SSS FUL L53

L56 SAV L55 LEE958A/A
 50 SEA L55 AND L32 AND L51 AND L52

FILE 'HCAPLUS' ENTERED AT 10:54:43 ON 08 JUL 2003

L57 105 SEA L56
 L58 0 SEA L57 AND L27
 L59 161 SEA L51
 L60 147 SEA L52
 L61 4 SEA (L59 OR L60) AND L27
 L62 4 SEA L61 NOT L45
 L63 9 SEA L46 OR L62
 L64 34 SEA L49 NOT L63

=> d 155 que stat
 L9 SCR 2043
 L13 STR

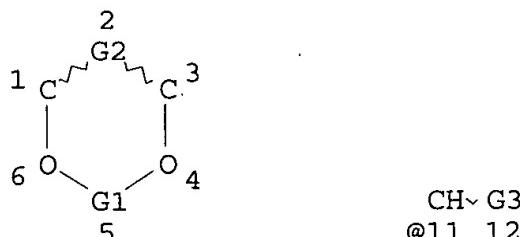


CH~ G3
 @11 12

VAR G1=CH2/11
 REP G2=(1-4) C
 VAR G3=ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
 L15 653 SEA FILE=REGISTRY SSS FUL L13 AND L9
 L53 STR



CH~ G3
 @11 12

VAR G1=CH2/11

REP G2=(1-4) C
VAR G3=ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L55 362 SEA FILE=REGISTRY SUB=L15 SSS FUL L53

100.0% PROCESSED 653 ITERATIONS 362 ANSWERS
SEARCH TIME: 00.00.01

=> d 17 1-5 all *author's registry number*

L7 ANSWER 1 OF 1 /REGISTRY COPYRIGHT 2003 ACS
RN 328060-50-0 REGISTRY
CN AZ-R 200 (9CI) (CA INDEX NAME)
OTHER NAMES:
CN R 200
ENTE A lithography material for coating on a resist pattern in RELACS process containing a water soluble polyvinyl acetal and an ethylene urea resin crosslinker (Clariant Corp., Somerville, NJ)
MF Unspecified
CI PMS, MAN
PCT Manual registration
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
5 REFERENCES IN FILE CA (1957 TO DATE)
5 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1

AN 138:311570 CA
TI Negative-acting aqueous photoresist composition
IN Lu, Ping-hung; Neisser, Mark O.; Dammel, Ralph R.; Wu, Hengpeng
PA Clariant International Ltd., Switz.; Clariant Finance (Bvi) Limited
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G03F007-038
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76

Search report only has two "A" references.

Lee 09/966, 958

Page 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003029900	A1	20030410	WO 2002-EP10026	20020907
	W: CN, JP, KR, SG RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	US 2003077539	A1	20030424	US 2001-966958	20010928

PRAI US 2001-966958 20010928

AB The invention relates to a novel neg., aq. photoresist compn. comprising a polyvinylacetal polymer, a water-sol. photoactive compd. and a crosslinking agent. The water-sol. photoactive compd. is preferably a sulfonium salt. The invention also relates to forming a neg. image from the novel photoresist compn.

ST neg acting aq photoresist compn photolithog

IT Negative photoresists

(neg.-acting aq. photoresist compn.)

IT Photolithography

(neg.-acting aq. photoresist compn. for)

IT 214149-84-5P

(neg.-acting aq. photoresist compn. contg.)

IT 2052-49-5, Tetrabutyl ammonium hydroxide 328060-50-0, R 200

(neg.-acting aq. photoresist compn. contg.)

IT 1879-16-9, 1-Methoxy-4-(methylthio)-benzene 2923-28-6, Silver triflate

(prepn. of acid generator for neg.-acting aq. photoresist compn.)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

(1) Harvard, J; CHEMISTRY OF MATERIALS 1999, V11(3), P719

(2) Toyoshima, T; US 5858620 A 1999 CAPLUS

REFERENCE 2

AN 138:18655 CA

TI Methods of forming transistor gates and methods of forming programmable read-only memory constructions

IN Scott, Winston G.

PA USA

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM H01L021-336

NCL 438299000

CC 76-3 (Electric Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002187611	A1	20021212	US 2001-876722	20010606

PRAI US 2001-876722 20010606

AB The invention includes a method of forming a transistor gate with min. features below those achievable by photolithog. One or more conductive materials are formed over a semiconductor substrate, and

a block is formed over the one or more conductive materials. The block comprises a photoresist mask and a material other than photoresist which is against the photoresist. A pattern is transferred from the block to the one or more conductive materials to pattern a transistor gate construction from the one or more conductive materials.

- ST gate lithog transistor ROM fabrication
 IT Memory devices
 (ROM (read only); methods of forming transistor gates and methods of forming programmable read-only memory constructions)
 IT Gate contacts
 Lithography
 Photolithography
 Photoresists
 Semiconductor memory devices
 (methods of forming transistor gates and methods of forming programmable read-only memory constructions)
 IT 7440-21-3, Silicon, uses
 (methods of forming transistor gates and methods of forming programmable read-only memory constructions)
 IT 328060-50-0, AZ R200
 (methods of forming transistor gates and methods of forming programmable read-only memory constructions)

REFERENCE 3

- AN 136:286476 CA
 TI Advanced micro-lithography process for i-line lithography
 AU Ishibashi, Takeo; Toyoshima, Toshiyuki; Kanada, Takashi; Yasuda, Naoki; Katayama, Keiichi; Tanaka, Mikihiro; Tanaka, Hatsuyuki
 CS ULSI Development Center, Mitsubishi Electric Co., Ltd., Itami, Hyogo, 664-8641, Japan
 SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2001), 40(12), 7156-7161
 CODEN: JAPNDE
 PB Japan Society of Applied Physics Dec.
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 AB In the previous paper, the development of an advanced micro-lithog. process for producing 0.1 .mu.m contact holes by KrF excimer laser (248 nm) lithog. have been reported. This chem. shrinkage technol., called resoln. enhancement lithog. assisted by chem. shrink (RELACS), utilizes the crosslinking reaction catalyzed by the acid component remaining in a predefined resist pattern. The results of the application of RELACS to i-line (365 nm) lithog are reported. The properties of RELACS for i-line lithog. were very different from those for KrF lithog. This is due to the difference in chem. mechanism between i-line and KrF resists. The characteristics of the application of RELACS to i-line lithog. were studied by conducting basic expts. on the addn. of a photo-acid generator (PAG)

Oct. 325

to an i-line resist and investigating the property of the crosslinking reactions involved in the pre-doping of various acids to RELACS film. Finally, RELACS materials were optimized to match i-line resist and the fabrication of contact holes less than 0.2 .mu.m diam. by i-line lithog was realized.

- ST photolithog i line novolak resist acid strength shrinkage technol; lithog photoresist RELACS chem shrink photoacid generator crosslinking
- IT Contraction (mechanical)
Photolithography
Photoresists
(advanced microlithog. process for i-line lithog. using different photoacid generators)
- IT Crosslinking
(photochem.; advanced microlithog. process for i-line lithog. using different photoacid generators)
- IT 328060-50-0, AZ R 200
(advanced microlithog. process for i-line lithog. using different photoacid generators)
- IT 405873-17-8, AZ-R 2
(developer; advanced microlithog. process for i-line lithog. using different photoacid generators)
- IT 1886-74-4 66003-78-9 85342-62-7 195057-83-1 405519-70-2
(photoacid generator; advanced microlithog. process for i-line lithog. using different photoacid generators)
- IT 195009-00-8, AZ 7900
(photoresist; advanced microlithog. process for i-line lithog. using different photoacid generators)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

- (1) Bauer, D; J Appl Polym Sci 1983, V28, P253 CAPLUS
- (2) Furukawa, T; 56th Autumn Meet 1995
- (3) Hayano, K; 55th Autumn Meet 1994
- (4) Ishibashi, T; Jpn J Appl Phys 2001, V40, P419 CAPLUS
- (5) Kudo, T; J Photopolym Sci & Technol 1998, V11, P445 CAPLUS
- (6) Linehan, L; Proc SPIE 1994, V2438, P164
- (7) Mimura, Y; Jpn J Appl Phys 1978, V17, P541 CAPLUS
- (8) Thackeray, J; J Photopolym Sci & Technol 1994, V7, P619 CAPLUS

REFERENCE 4

- AN 136:159895 CA
- TI Photolithographic process for manufacturing a microelectronic device using shrinkage materials
- IN Dammel, Ralph R.; Eakin, Ronald J.; Spak, Mark A.
- PA Clariant International Ltd., Switz.; Clariant Finance (BVI) Limited
- SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
- DT Patent
- LA English
- IC ICM G03F007-00
- CC 76-3 (Electric Phenomena)
Section cross-reference(s): 74

FAN.CNT 1.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002010858	A2	<u>20020207</u>	WO 2001-EP8391	20010720
	WO 2002010858	A3	<u>20020808</u>		
		W:	CN, JP, KR, SG		
		RW:	AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR		
	EP 1307785	A2	<u>20030507</u>	EP 2001-949500	20010720
		R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR		
PRAI	US 2000-629279		20000731		
	WO 2001-EP8391		20010720		
AB	The present invention relates to a process for manufg. a microelectronic device, comprising providing a substrate with a photoresist image, coating the photoresist image with a shrinkage material, insolubilizing a portion of the shrinkage material in contact with the photoresist image, removing a portion of the shrinkage material which is not insolubilized with a removal soln., further where the removal soln. comprises an aq. soln. of a surfactant.				
ST	photolithog semiconductor device shrinkage material surfactant photoresist				
IT	Surfactants (anionic; photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	Surfactants (nonionic; photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	Microelectronic devices Photolithography Photoresists Solvents Surfactants (photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	Acids, processes (photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	Hydroxides (inorganic) (photoresist remover; photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	Coating process (spin, photoresist; photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	24979-70-2, Poly(4-hydroxystyrene) 159296-87-4, 4-Hydroxystyrene-tert-butyl acrylate copolymer (DUV photoresist; photolithog. process for manufg. microelectronic device using shrinkage materials)				
IT	9014-85-1, Surfynol 440 106392-12-5, Macol 16 (anionic surfactant; photolithog. process for manufg. microelectronic device using shrinkage materials)				

- IT 75-59-2, AZ-MIF 300
(developer; photolithog. process for manufg. microelectronic device using shrinkage materials)
- IT 394733-02-9, AZ-DX 3200
(photolithog. process for manufg. microelectronic device using shrinkage materials)
- IT 7440-21-3, Silicon, processes
(photolithog. process for manufg. microelectronic device using shrinkage materials)
- IT 328060-50-0, AZ R200
(shrink material; photolithog. process for manufg. microelectronic device using shrinkage materials)
- IT 2235-54-3, Ammonium lauryl sulfate 55489-71-9, Tetramethylammonium stearate, processes 64000-90-4, Tetramethylammonium laurate, processes 75593-43-0, Tetramethylammonium hexanoate, processes (surfactant; photolithog. process for manufg. microelectronic device using shrinkage materials)

REFERENCE 5

- AN 134:200412 CA
- TI Advanced microlithography process with chemical shrink technology
- AU Kanda, Takashi; Tanaka, Hatsuyuki; Kinoshita, Yoshiaki; Watase, Natsuo; Eakin, Ronald J.; Ishibashi, Takeo; Toyoshima, Toshiyuki; Yasuda, Naoki; Tanaka, Mikihiro
- CS BU Electronic Mater. Clariat (Japan) K.K., Ogasa-gun, Shizuoka Pref., Japan
- SO Proceedings of SPIE-The International Society for Optical Engineering (2000), 3999(Pt. 2, Advances in Resist Technology and Processing XVII), 881-889
CODEN: PSISDG; ISSN: 0277-786X
- PB SPIE-The International Society for Optical Engineering
- DT Journal
- LA English
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
- AB A chem. shrink technol., RELACS (Resoln. Enhancement Lithog. Assisted by Chem. Shrink), utilizes the crosslinking reaction catalyzed by the acid component existing in a predefined resist pattern. The effect of chem. amplified resist compn. on the shrinkage performance of RELACS coating was studied. The authors conducted investigations of shrink magnitude dependency on each process parameter. The authors found that the mixing bake condition (diffusion bake temp.) was one of most crit. parameters to affect the amt. of contact hole (CH) shrink. Addnl., the structural influence of photoacid generators on shrinkage performance was also investigated in both high and low activation energy resist systems. The shrinkage behavior by the photoacid generator of the resist was considered in terms of the structure (mol. vol.) of the photogenerated acid and its acidity (pKa). The results of these studies are discussed in terms of base polymer influence on

shrinkage performance and tendency. Process impact of the structure and acidity of the photogenerated acid was explored. Though the exptl. acetal type KrF pos. resist (low activation energy system) could achieve around 0.1 .mu.m CH after RELACS processing under the optimized condition, the exptl. acrylate type pos. resist (high activation energy system) showed less shrinkage under the same process condition. The shrinkage performance of RELACS process largely depended on the resist chem. used as the underlying layer. Further, shrinkage degree could be controlled by process optimization even for the high activation energy type photoresist.

ST photolithog Relacs process contact hole shrinkage photoresist effect
IT Contact holes

Crosslinking

Photolithography

(chem. amplified photoresist compn. effect on shrinkage performance of RELACS coating in microlithog. process)

IT Semiconductor device fabrication
(chem. amplified photoresist compn. effect on shrinkage performance of RELACS coating in microlithog. process in relation to)

IT Photoresists
(chem. amplified; chem. amplified photoresist compn. effect on shrinkage performance of RELACS coating in microlithog. process)

IT 328060-50-0, AZ-R 200
(chem. amplified photoresist compn. effect on shrinkage performance of RELACS coating in microlithog. process)

IT 104-15-4, p-Toluenesulfonic acid, processes 375-73-5,
Nonafluorobutanesulfonic acid 1493-13-6, Trifluoromethanesulfonic acid 3144-16-9, Camphorsulfonic acid 14159-45-6
(photoacid generator; chem. amplified photoresist compn. effect on shrinkage performance of RELACS coating in microlithog. process)

IT 111-86-4, Octylamine
(resist compn.; chem. amplified photoresist compn. effect on shrinkage performance of RELACS coating in microlithog. process)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

- (1) Furukawa, T; 56th JSAP Autumn Meeting 1995
- (2) Hayano, K; Proceeding 56th JSAP Autumn Meeting 1995
- (3) Hien, S; Journal of Photopolymer Science and Technology 1999, V12(4), P673 CAPLUS
- (4) Ishibashi, T; Proceeding Silicon Technology 1999, V11, P12
- (5) Kim, J; MNC 1998
- (6) Nakao, S; IEDM96 Dig 1996, P61
- (7) Sebald, M; SPIE 1990, V1262, P528 CAPLUS
- (8) Sebald, M; SPIE 1991, V1466, P227 CAPLUS
- (9) Toyoshima, T; IEDM98 Dig 1998, P333 CAPLUS

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=> d 163 1-9 cbib abs hitstr hitind

L63 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2003 ACS
 2002:378689 Document No. 136:393271 Electron beam- or x-ray
resist compositions with high sensitivity and resolution.
 Kodama, Kunihiko; Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan).
 Jpn. Kokai Tokkyo Koho JP 2002148788 A2 20020522, 65 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-343818 20001110.

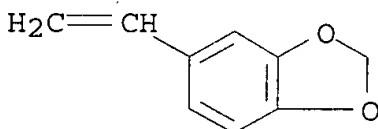
AB The compn. contains a photoacid generator (A) contg. .gtoreq.1
 disulfone compd. and sulfonium and/or iodonium sulfonate and a
 polymer (B) bearing an acid-degradable group for increasing solv. in
 an alkali developer soln. The compn., showing good PSD (post
 coating delay) stability, gives a pattern with good profile.

IT 86830-84-4DP, Poly(5-vinyl-1,3-benzodioxole), hydrolyzed
 (alkali-sol. polymer; electron beam- or x-ray **resist**
 compns. contg. onium sulfonates with high sensitivity and
 resoln.).

RN 86830-84-4 HCAPLUS
 CN 1,3-Benzodioxole, 5-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 7315-32-4
 CMF C9 H8 O2



IC ICM G03F007-004
 ICS G03F007-004; C08K005-00; C08L025-18; C08L061-06; C08L101-02;
 G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38

ST pos electron beam **resist** high sensitivity; sulfonium
 photoacid generator x ray **resist**; **resist** post
 coating delay stability

IT Electron beam **resists**
 X-ray **resists**
 (neg.-working; electron beam- or x-ray **resist** compns.
 contg. onium sulfonates with high sensitivity and resoln.)

IT Phenolic resins, uses
 (novolak, cresol, alkali-sol. polymer; electron beam- or x-ray
resist compns. contg. onium sulfonates with high
 sensitivity and resoln.)

- IT Electron beam **resists**
X-ray resists
 (pos.-working; electron beam- or x-ray **resist** compns.
 contg. onium sulfonates with high sensitivity and resoln.)
- IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with polyhydroxystyrene 24979-70-2DP, VP 8000, reaction products with di-tert-Bu dicarbonate **86830-84-4DP**, Poly(5-vinyl-1,3-benzodioxole), hydrolyzed 95418-59-0DP, p-tert-Butoxystyrene-styrene copolymer, hydrolyzed 103983-46-6DP, Ether, 2-cyclohexylethyl vinyl, reaction products with polyhydroxystyrene 185405-14-5P, 4-Hydroxystyrene-5-vinyl-1,3-benzodioxole copolymer 398457-06-2P, Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with 4-ethenyl-1,2-benzenediol and 5-ethenyl-1,3-benzodioxole 426832-90-8DP, hydrolyzed 426832-91-9P
 (alkali-sol. polymer; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 24979-70-2, VP 8000 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 129674-22-2 158593-28-3 199432-82-1 200808-68-0 216258-44-5 288620-13-3 288620-15-5 289706-85-0 325143-37-1 359434-80-3 372968-15-5 387382-45-8 387382-49-2 398457-05-1
 (alkali-sol. polymer; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 162846-57-3P
 (crosslinking agent; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 3089-11-0P 17464-88-9P 32449-09-5P 161679-94-3P 185502-11-8P 185502-14-1P 185502-15-2P 197087-74-4P
 (crosslinking agent; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 153698-63-6 153698-65-8
 (dissoln. inhibitor; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 110726-28-8, 1-[.alpha.-Methyl-.alpha.-(4'-hydroxyphenyl)ethyl]-4- [.alpha.',.alpha.'-bis(4''-hydroxyphenyl)ethyl]benzene
 (for dissoln. inhibitor or crosslinking agent prepn.; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 76937-83-2, .alpha.,.alpha.,.alpha.',.alpha.',.alpha.'',.alpha.'' - Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane
 (for dissoln. inhibitor prepn.; electron beam- or x-ray **resist** compns. contg. onium sulfonates with high sensitivity and resoln.)
- IT 10409-07-1 13603-79-7 14159-45-6 22040-25-1 58113-98-7 91222-47-8 124737-97-9 138529-81-4 138529-84-7 144317-44-2 153698-46-5 153698-66-9 154220-26-5 194712-93-1 197447-16-8

258341-98-9 258872-05-8 270563-93-4 270563-96-7 279244-50-7
 297742-41-7 389859-76-1 398141-18-9 426832-92-0 426832-93-1
 426832-94-2 426832-95-3

(photoacid generator; electron beam- or x-ray **resist**
 compns. contg. onium sulfonates with high sensitivity and
 resoln.)

L63 ANSWER 2 OF 9 HCPLUS COPYRIGHT 2003 ACS

2002:119604 Document No. 136:191686 Electron beam or x-ray
resist composition containing sulfonate salt photoacid
 generator. Kodama, Kunihiro; Aogo, Toshiaki (Fuji Photo Film Co.,
 Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002049155 A2 20020215, 65
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-233216
 20000801.

AB The compn. contains (A) .gtoreq.1 N-hydroxyimide sulfonate esters
 and .gtoreq.1 onium sulfonate salts selected from sulfonium
 sulfonates and iodonium sulfonates as acid generators by electron
 beam or x-ray radiation and (B) base polymers selected from (1)
 polymers having acid-degradable groups to increase alkali
 developability for pos. working, (2) low-mol.-wt. dissoln.
 inhibitors with mol. wt. .ltoeq.3000 having acid-degradable group
 to increase dissoln. speed in alkali developeres by acids and
 water-insol. and alkali-developable polymers for pos. working, and
 (3) water-insol. and alkali-developable polymers and acid-catalytic
 crosslinking agents for neg. working. The compn. shows high
 sensitivity and gives high resoln. **resist** patterns with
 good post-coating delay (PCD) stability.

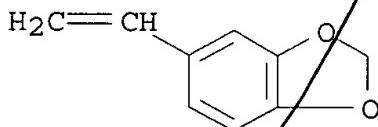
IT 86830-84-4DP, hydrolyzed
 (electron beam or x-ray **resist** compn. contg. sulfonate
 salt photoacid generator)

RN 86830-84-4 HCPLUS

CN 1,3-Benzodioxole, 5-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 7315-32-4
 CMF C9 H8 O2



IC ICM G03F007-039
 ICS C08K005-00; C08L101-00; G03F007-004; G03F007-032; G03F007-038;
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

ST electron beam x ray **resist** sulfonate salt photoacid
 generator; hydroxyimide sulfonate ester photoacid generator

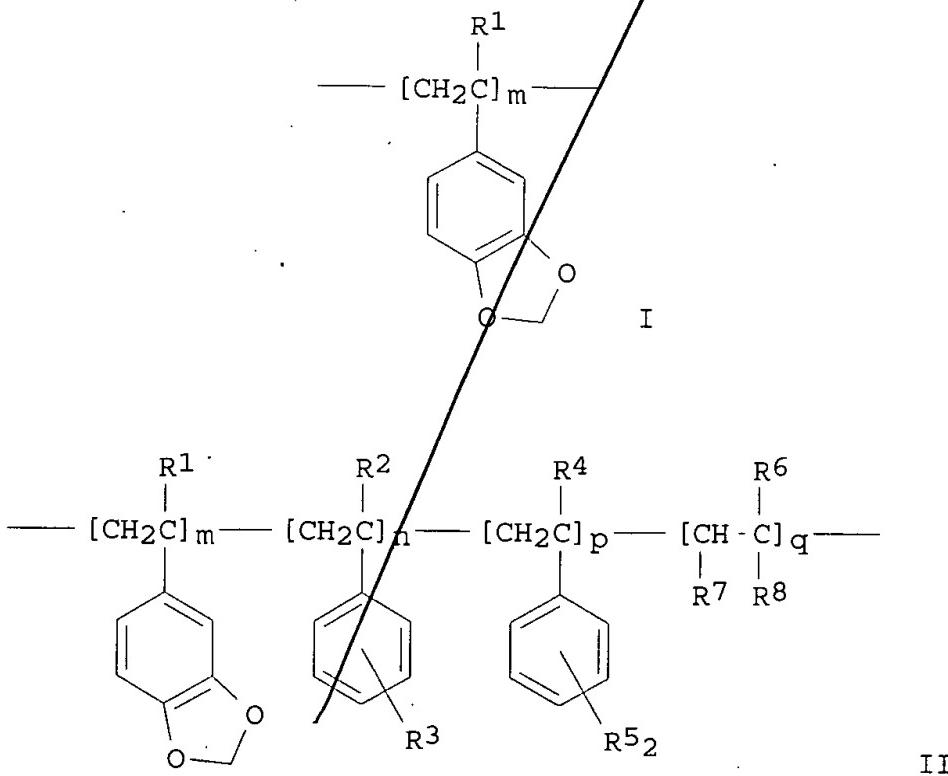
resist; onium sulfonate salt photoacid generator
resist; sulfonium iodonium sulfonate salt photoacid
generator resist
IT Electron beam **resists**
X-ray **resists**
(electron beam or x-ray **resist** compn. contg. sulfonate
salt photoacid generator)
IT 162846-57-3P
(crosslinking agent, methylation of; electron beam or x-ray
resist compn. contg. sulfonate salt photoacid generator)
IT 161679-94-3P
(crosslinking agent; electron beam or x-ray **resist**
compn. contg. sulfonate salt photoacid generator)
IT 3089-11-0 17464-88-9 32449-09-5 185502-11-8 185502-14-1
185502-15-2 197087-74-4
(crosslinking agent; electron beam or x-ray **resist**
compn. contg. sulfonate salt photoacid generator)
IT 153698-69-2P
(dissoln. inhibitor; electron beam or x-ray **resist**
compn. contg. sulfonate salt photoacid generator)
IT 153698-63-6 153698-65-8
(dissoln. inhibitor; electron beam or x-ray **resist**
compn. contg. sulfonate salt photoacid generator)
IT 24979-70-2DP, VP 8000, reaction products with cyclohexylphenoxyethyl
vinyl ether 86830-84-4DP, hydrolyzed 95418-59-0DP,
p-tert-Butoxystyrene-styrene copolymer, hydrolyzed 103983-46-6DP,
reaction products with polyhydroxystyrene 110134-35-5P
147625-42-1P 160309-96-6DP, p-Acetoxystyrene-tert-butyl
methacrylate copolymer, hydrolyzed 185405-11-2P 185405-14-5DP,
4-Hydroxystyrene-5-vinyl-1,3-benzodioxole copolymer, hydrolyzed
185405-14-5P, 4-Hydroxystyrene-5-vinyl-1,3-benzodioxole copolymer
212555-24-3DP, 4-Cyclohexylphenoxyethyl vinyl ether, reaction
products with polyhydroxystyrene 321164-59-4P 345212-27-3P
349647-01-4P 398457-06-2P 398457-07-3P 398457-08-4P
(electron beam or x-ray **resist** compn. contg. sulfonate
salt photoacid generator)
IT 24979-69-9, Poly(m-hydroxystyrene) 24979-70-2, VP 15000
27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 129674-22-2
158593-28-3, p-(1-Ethoxyethoxy) styrene-p-hydroxystyrene copolymer
159296-87-4 199432-82-1 200808-68-0 279244-35-8 279244-37-0
288620-13-3 288620-15-5 289706-85-0 325143-37-1 359434-80-3
372968-15-5 387382-45-8 387382-49-2 398457-05-1
(electron beam or x-ray **resist** compn. contg. sulfonate
salt photoacid generator)
IT 56530-39-3 57212-70-1 66003-78-9 133710-62-0 135133-15-2
141714-82-1 144317-44-2 153698-46-5 154220-26-5 179419-32-0
193345-23-2 194999-85-4 197447-16-8 199432-74-1 199432-79-6
199432-80-9 258341-98-9 270563-93-4 270563-96-7 279244-50-7
297742-41-7 398457-09-5 398457-10-8 398457-11-9 398457-12-0
398457-13-1 398457-14-2 398457-15-3 398457-16-4
(photoacid generator; electron beam or x-ray **resist**
compn. contg. sulfonate salt photoacid generator)

- IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 (prepn. of crosslinking agent; electron beam or x-ray
resist compn. contg. sulfonate salt photoacid generator)
- IT 110-87-2, 3,4-Dihydro-2H-pyran 5292-43-3, tert-Butyl bromoacetate
 76937-83-2 148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane
 153698-47-6, Cumyl bromoacetate 196709-88-3
 (prepn. of dissoln. inhibitor; electron beam or x-ray
resist compn. contg. sulfonate salt photoacid generator)
- IT 110-75-8, 2-Chloroethyl vinyl ether 1131-60-8, p-Cyclohexylphenol
 (prepn. of substituent for polyhydroxystyrene; electron beam or
 x-ray **resist** compn. contg. sulfonate salt photoacid
 generator)

L63 ANSWER 3 OF 9 HCPLUS COPYRIGHT 2003 ACS

1997:61077 Document No. 126:96929 Polymer of modified styrene-type
 unit and chemical amplification-type positive-working **resist**
 composition using same. Watanabe, Osamu; Takeda, Yoshifumi; Tsuchi,
 Junji; Ishihara, Toshinobu (Shinetsu Chem Ind Co, Japan). Jpn.
 Kokai Tokkyo Koho JP 08286375 A2 19961101 Heisei, 14 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-111188 19950412.

GI



AB The polymer has the general formula I or II with wt. av. mol. wt. (Mw) 3000-300,000 [R1, R2, R4, R6 = H or Me; R3, R5 = H, C1-6 alkyl, OX (X = H or acid-labile group); R7 = H and R8 = CO₂Y (Y = H or acid-labile group) but R7 and R8 may link to form CO₂CO; p = pos. integer, m, n, p, q = 0 or pos. integer satisfying the relation 0 < m/(m + n + p + q) .1toreq.1]. The title compn. comprises an org. solvent, the polymer as a base resin, a acid-generating agent, and an optional dissoln. inhibitor. A **resist** using 4-vinylbenzodioxole-3,4-dihydroxystyrene copolymer (0.82:0.18 mol ratio; Mw 14,500) showed high photosensitivity, resoln., exposure latitude, and processability.

IT **86830-84-4P**

(polymer of modified styrene-type unit contg. acid-generating agent for chem. amplification pos. working **resist**)

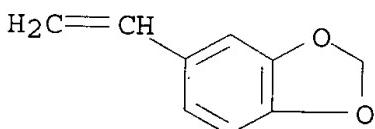
RN 86830-84-4 HCPLUS

CN 1,3-Benzodioxole, 5-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 7315-32-4

CMF C9 H8 O2



IC ICM G03F007-039
ICS G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST vinylbenzodioxole dihydroxystyrene copolymer **resist**; chem amplification pos working **resist**; single dispersion polymer **resist**; acid generating sulfonium salt **resist**; living polymn polymer **resist**

IT **Photoresists**

(polymer of modified styrene-type unit contg. acid-generating agent for chem. amplification pos. working **resist**)

IT 13891-29-7 14159-45-6 141573-11-7 157089-26-4

(acid-generating agent; polymer of modified styrene-type unit contg. acid-generating agent for chem. amplification pos. working **resist**)

IT 117458-06-7 180921-76-0

(dissoln. inhibitor; polymer of modified styrene-type unit contg. acid-generating agent for chem. amplification pos. working **resist**)

IT **86830-84-4P** 185405-11-2P 185405-14-5P 185405-17-8P

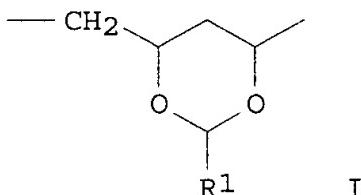
185405-21-4P 185405-25-8P 185405-31-6P 185405-39-4P

185405-45-2P

(polymer of modified styrene-type unit contg. acid-generating agent for chem. amplification pos. working **resist**)

L63 ANSWER 4 OF 9 HCPLUS COPYRIGHT 2003 ACS
 1995:992998 Document No. 124:133338 Water-soluble photosensitive resin composition containing butyral resin and pattern-forming method using it. Gokochi, Tooru; Niki, Hiroichi; Shinoda, Naomi; Naito, Takuya; Nakase, Makoto; Asakawa, Koji; Motomya, Akinori (Tokyo Shibaura Electric Co, Japan). Jpn. Kokai Tokkyo Koho JP 07253668 A2 19951003 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-43623 19940315.

GI



= 5691161

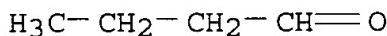
AB The compn. with total metal-ion content ≤ 1000 ppm (based on the total solid content) contains (A) a water-sol acid-generating compd. by light or ionizing radiation and (B) ≥ 1 water-sol. polymer having repeating units I and $\text{CH}_2\text{CH}(\text{OH})$ ($\text{R}^1 = \text{H}$, monovalent org. group) or a water-sol. photosensitive compn. contg. a PVA-contg. copolymer. The compn. is useful for fine processing of semiconductor devices. The title method involves (1) applying the compn. on a substrate, (2) irradiating light or ionizing radiation to form a pattern, (3) heating it to chem. amplify, and (4) developing the substrate with water. The toxic compd.-free compn. showed high sensitivity.

IT 123-72-8DP, Butanal, butyral with poly(vinyl alc.)
 9002-89-5DP, Poly(vinyl alcohol), butyral with butanal or glyoxylic acid

(water-developable photosensitive resin compn. contg. butyral resin)

RN 123-72-8 HCPLUS

CN Butanal (9CI) (CA INDEX NAME)

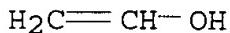


RN 9002-89-5 HCPLUS
 CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O



IC ICM G03F007-038
 ICS C08F016-06; C08F016-38; C08L029-04; C08L029-14; G03F007-004;
 H01L021-027

CC 76-14 (Electric Phenomena)
 Section cross-reference(s): 38, 74

ST vinyl butyral water soluble **photoresist**; semiconductor
 processing water developable **resist**

IT **Resists**
 (photo-, water-developable photosensitive resin compn. contg.
 butyral resin)

IT 123-72-8DP, Butanal, butyrals with poly(vinyl alc.)
 298-12-4DP, butyrals with poly(vinyl alc.) 9002-89-5DP,
 Poly(vinyl alcohol), butyrals with butanal or glyoxylic acid
 (water-developable photosensitive resin compn. contg. butyral
 resin)

L63 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2003 ACS
 1990:627533 Document No. 113:227533 Method of providing a substrate
 with a layer comprising a polyvinyl-based hydrogel and a
 biochemically active material. Kuypers, Martinus Henricus; Steeghs,
 Gerardus Fransiscus Jozef; Brinkman, Egbert (PPG Hellige B. V.,
 Neth.). Eur. Pat. Appl. EP 363504 A1 19900418, 9 pp. DESIGNATED
 STATES: R: CH, DE, FR, GB, IT, LI, NL, SE. (English). CODEN:
 EPXXDW. APPLICATION: EP 1988-116789 19881010.

AB A substrate surface is coated with a polyvinyl-based hydrogel and a
 biochem. active material using photolithog. by (1) coating the
 substrate by centrifugal force with an aq. soln. of a photosensitive
 hydrogel-forming polymer, a polyazonium compd. of glutardialdehyde
 as crosslinking agent, and the biochem. active material; (2) drying
 the coating; (3) exposing the coated substrate through a
photomask to UV radiation; and (4) developing the exposed
 coating. The method is useful in making biosensors and e.g.
 antithrombogenic coatings. A coating soln. contg. polyvinyl alc., a
 polymeric polyazonium compd. obtained by the condensation of
 diphenylamine 4-diazonium sulfate with formaldehyde,
 glutardialdehyde, and heparin was applied as a uniform coating on a
 substrate by spinning and dried. The coating was then subjected to
 UV light to crosslink the polyvinyl alc. and to heat at 60.degree.
 to fully crosslink with the glutardialdehyde. The polyvinyl
 alc.-polyazonium-glutaraldehyde-heparin membrane was not permeable
 to albumin and had antithrombogenic properties superior to silicone
 rubber. Diagrammatic views of oxygen sensors are presented.

IT 9002-89-5D, Polyvinyl alcohol, hydrogels, reaction products
 with heparin and polyazonium glutardialdehyde
 (antithrombogenic membrane of)

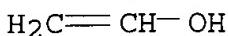
RN 9002-89-5 HCAPLUS

CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5

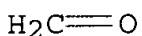
CMF C2 H4 O



IT 50-00-0D, Formaldehyde, reaction products with diphenylamine 4-diazonium sulfate
 (as crosslinking agent in prepn. of substrate coated with polyvinyl-based hydrogel and biol. active material)

RN 50-00-0 HCPLUS

CN Formaldehyde (8CI, 9CI) (CA INDEX NAME)



IC ICM G03F007-016
 ICS A61L033-00

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 63

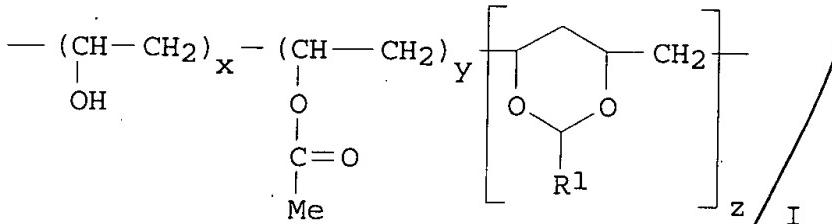
IT 9002-89-5D, Polyvinyl alcohol, hydrogels, reaction products with heparin and polyazonium glutardialdehyde
 (antithrombogenic membrane of)

IT 50-00-0D, Formaldehyde, reaction products with diphenylamine 4-diazonium sulfate 111-30-8D, Glutardialdehyde, polyazonium reaction products 150-33-4D, reaction products with formaldehyde 5957-03-9D, [1,1'-Biphenyl]-4,4'-bis(diazonium), glutardialdehyde reaction products 20282-70-6D, glutardialdehyde reaction products 25146-05-8D, glutardialdehyde reaction products 130343-32-7D, glutardialdehyde reaction products 130343-33-8D, glutardialdehyde reaction products
 (as crosslinking agent in prepn. of substrate coated with polyvinyl-based hydrogel and biol. active material)

L63 ANSWER 6 OF 9 HCPLUS COPYRIGHT 2003 ACS

1990:22102 Document No. 112:22102 Manufacture of pellicle membranes for **masks** and reticles in microlithography. Oono, Hideki; Uchikura, Masaki; Hasebe, Yoshio (Tosoh Corp., Japan). Jpn. Kokai Tokkyo Koho JP 01172430 A2 19890707 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-332937 19871228.

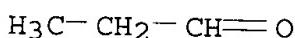
GI



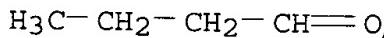
AB Title membranes are prep'd. from polyvinyl acetals I [R₁ = Cl-3 alkyl; y/(x + y + z) < 10 mol %; z/(x + y + z) > 60 mol %] using aliph. or alicyclic ketones b. 110-170.degree. as solvent. A 10% soln. of I (R₁ = Et; vinyl acetate content 62 mol %; degree of acetalization 82 mol %) in 4-methyl-2-pentanone was applied to a Si wafer and dried in vacuo to form a film with av. thickness 1.626 .mu.m and 0.69% fluctuation.

IT. 123-38-6D, Propionaldehyde, reaction products with poly(vinyl alc.) 123-72-8D, Butyraldehyde, reaction products with poly(vinyl alc.) 9002-89-5D, Poly(vinyl alcohol), reaction products with aldehydes

RN 123-38-6 HCAPLUS
CN Propanal (9CI) (CA INDEX NAME)



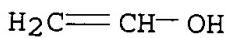
RN 123-72-8 HCAPLUS
CN Butanal (9CI) (CA INDEX NAME)



RN 9002-89-5 HCAPLUS
CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

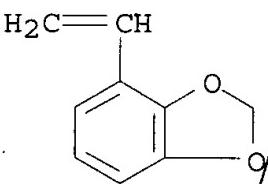
CM 1

CRN 557-75-5
CMF C2 H4 O



IC ICM C08J005-18
 ICS C08L029-14; G03F001-00; H01L021-30
CC 38-3 (Plastics Fabrication and Uses)

- IT Section cross-reference(s): 76
 78-84-2D, Isobutyraldehyde, reaction products with poly(vinyl alc.)
123-38-6D, Propionaldehyde, reaction products with poly(vinyl alc.) **123-72-8D**, Butyraldehyde, reaction products with poly(vinyl alc.) **9002-89-5D**, Poly(vinyl alcohol), reaction products with aldehydes (pellicle membranes, for microlithog., manuf. of, solvents for)
- L63 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2003 ACS
 1989:447949 Document No. 111:47949 Novel negative working **photoresists**. Crivello, J. V. (Gen. Electr. Corp. Res. Dev., Schenectady, NY, 12301, USA). Journal of the Electrochemical Society, 136(5), 1453-6 (English) 1989. CODEN: JESOAN. ISSN: 0013-4651.
- AB A new class of **photoresists** consisting of vinyl arom. polymers bearing electron-releasing substituents or halogens together with photosensitive onium salts such as diaryliodonium and triarylsulfonium was developed. These **photoresists** undergo facile crosslinking upon irradn. with UV light at wavelengths absorbed by the onium salts. Therefore, they provide neg.-tone **photoresists** with high photosensitivity. Mechanisms that rationalize the crosslinking reactions are proposed.
- IT **104934-81-8P**
 (prep. and photoimaging of, neg.-working **photoresist** in relation to)
- RN 104934-81-8 HCAPLUS
 CN 1,3-Benzodioxole, 4-ethenyl-, homopolymer (9CI) (CA INDEX NAME)
- CM 1
 CRN 104721-74-6
 CMF C9 H8 O2
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **photoresist** vinyl arom polymer onium salt
- IT **Resists**
 (photo-, neg., from vinyl arom. polymers bearing electron-donor substituents or halogens and photosensitive onium salts)
- IT 9003-53-6, Vinylbenzene polymer 24936-41-2 24936-50-3,
 4-Bromostyrene polymer 24936-54-7 24979-70-2, 4-Hydroxystyrene polymer 24991-47-7, 4-Chlorostyrene polymer 25014-31-7
 25036-01-5 25067-59-8 25135-12-0 28406-56-6



IT 71449-78-0 84563-54-2
 (neg.-working **photoresist** compn. contg. onium salt and)
 IT 24936-44-5, Poly(4-methoxystyrene)
 (photoimaging compn. contg. di-(butylphenyl)iodonium
 hexafluoroantimonate and, neg.-working **photoresist** in
 relation to)
 IT 61358-23-4
 (photoimaging compn. contg. poly(methoxystyrene) and,
 neg.-working **photoresist** in relation to)
 IT 104934-81-8P
 (prepn. and photoimaging of, neg.-working **photoresist**
 in relation to)

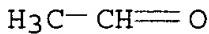
L63 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2003 ACS
 1983:454662 Document No. 99:54662 Relationship between electron
 sensitivity and chemical structures of polymers as EB
resists. II. Acetalized poly(vinyl alcohol) as new
 negative EB **resists.** Ogata, Naoya; Sanui, Kohei; Oguchi,
 Kiyoshi; Nakada, Tomihiro; Takahashi, Yoichi (Fac. Sci. Technol.,
 Sophia Univ., Tokyo, 102, Japan). Journal of Applied Polymer
 Science, 28(7), 2433-7 (English) 1983. CODEN: JAPNAB. ISSN:
 0021-8995.

AB Acetals of poly(vinyl alc.) with p-chlorobenzaldehyde, acetaldehyde,
 cyclohexanone, and benzaldehyde are easily crosslinked by electron
 beam exposure, and they are useful as **resists** for printed
 circuits. The polymers contg. a benzene ring in the acetal group
 have sensitivity with good adaptability to dry etching processes.

IT 75-07-0D, acetals with poly(vinyl alc.) 9002-89-5D
 , acetals
 (**resists**, electron beam-curable, for printed circuits)

RN 75-07-0 HCAPLUS

CN Acetaldehyde (8CI, 9CI) (CA INDEX NAME)



RN 9002-89-5 HCAPLUS
 CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
 CMF C2 H4 O

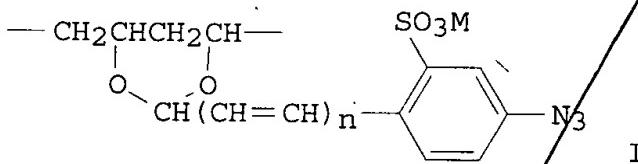


CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 36, 37, 76

ST polyvinyl alc acetal **resist**; printed circuit
resist; electron beam crosslinkable **resist** acetal
IT Crosslinking
 (of poly(vinyl alc.) acetal **resists** by electron beam)
IT Electron beam, chemical and physical effects
 (poly(vinyl alc.) acetal **resists** curable by)
IT Vinyl acetal polymers
 (**resists**, electron beam-curable, for printed circuits)
IT Electric circuits
 (printed, **resists** for, poly(vinyl alc.) acetals as)
IT 75-07-0D, acetals with poly(vinyl alc.) 100-52-7D, acetals
 with poly(vinyl alc.) 104-88-1D, acetals with poly(vinyl alc.)
 108-94-1D, acetals with poly(vinyl alc.) 9002-89-5D,
 acetals
 (**resists**, electron beam-curable, for printed circuits)

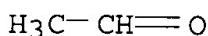
L63 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2003 ACS
1981:217650 Document No. 94:217650 Light-sensitive **photoresist**
materials. Hashimoto, Michiaki; Hatano, Yoshio; Kohashi, Takahiro;
Nonogaki, Saburo (Hitachi, Ltd., Japan). U.S. US 4241162 19801223,
10 pp. Cont.-in-part of U.S. Ser. No. 592,357, abandoned.
(English). CODEN: USXXAM. APPLICATION: US 1976-747040 19761202.

GI



- AB Water-sol. azides of the formula I (M = an atom or at. group capable of being converted into a cation in an aq. soln.; n = 1-6) are described for use as **photoresists** in the photoengraving process or the prodn. of phosphor screens of color picture tubes. Thus, a 3% by wt. aq. soln. of the polymer prep'd. by reacting the reaction product of acetaldehyde and Na 4-azidobenzaldehyde-2-sulfonate with poly(vinyl alc.) (d.p. 2400; sapon. value: 88%) 200 and Eu-activated yttrium oxysulfide phosphor (Y2O2S:Eu) 100 g were mixed. This suspension was then coated on the front glass panel of a Braun picture tube by spin coating and dried. The resulting film was exposed to light through a shadow **mask** for 1.5 min at 800 lx and then developed with water. This compn. required only 1/8 the exposure time of a conventional compn. contg. poly(vinyl alc.) and NH4 dichromate.
- IT 75-07-0D, reaction products with poly(vinyl alc.) and sodium azidobenzaldehydesulfonate 9002-89-5D, reaction products with acetaldehyde and sodium azidobenzaldehydesulfonate (**photoresists** from, water-sol.)
- RN 75-07-0 HCAPLUS

CN Acetaldehyde (8CI, 9CI) (CA INDEX NAME)



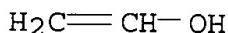
RN 9002-89-5 HCAPLUS

CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O



IC G03C001-68; G03C001-52; C12P033-10

NCL 430195000

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic Processes)

Section cross-reference(s): 76

ST azide photoresist phosphor screen TV

IT Vinyl acetal polymers

(cyclic acetals with azidosodiosulfophenylpoly(alkylene)carboxaldehydes, photoresists from, water-sol.)

IT Gelatins, uses and miscellaneous

(photoresists compns. contg. azide and, water-sol.)

IT Printing plates

(gravure, photoresist compns. contg. water-sol. azides in fabrication of)

IT Resists

(photo-, aldehyde-poly(vinyl alc.)-sodium azidobenzaldehydesulfonate condensation products as water-sol.)

IT 1760-24-3 9003-11-6 37199-81-8

(photoresist compns. contg. azide and, water-sol., for color TV picture phosphor screen fabrication)

IT 9003-05-8 9003-39-8

(photoresists compns. contg. azide and, water-sol.)

IT 75-07-0D, reaction products with poly(vinyl alc.) and sodium azidobenzaldehydesulfonate 9002-89-5D, reaction products with acetaldehyde and sodium azidobenzaldehydesulfonate

55305-94-7D, reaction products with acetaldehyde and poly(vinyl alc.) 58929-82-1D, cyclic acetal with poly(vinyl alc.)

59471-81-7D, cyclic acetal with poly(vinyl alc.) 59471-82-8D, cyclic acetal with poly(vinyl alc.) 59471-83-9D, cyclic acetal with poly(vinyl alc.) 77815-79-3D, cyclic acetal with poly(vinyl alc.)

(photoresists from, water-sol.)

=> d 164 1-34 cbib abs hitstr hitind

L64 ANSWER 1 OF 34 HCPLUS COPYRIGHT 2003 ACS
2003:432985 Document No. 139:14962 Electron beam or x-ray

resist compositions having high sensitivity and resolution.
Shirakawa, Hiroshi; Uenishi, Kazuya; Kodama, Kunihiko; Adekawa,
Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho
JP 2003162051 A2 20030606, 77 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 2001-360938 20011127.

AB The resist compns. contain electron beam- or x-ray
sensitive acid generator involving .gtoreq.2 onium sulfonic acid
salts selected from sulfonyl sulfonic acid salts and iodonium
sulfonic acid salts.

IT 185405-14-5P

(binder; electron beam or x-ray resist compns. having
high sensitivity and resoln.)

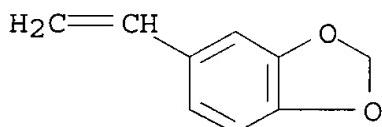
RN 185405-14-5 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

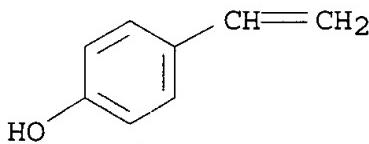
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 185405-11-2 398457-07-3 398457-08-4

(binder; electron beam or x-ray resist compns. having
high sensitivity and resoln.)

RN 185405-11-2 HCPLUS

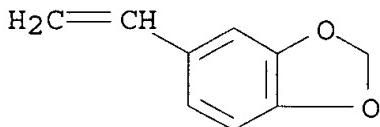
CN 1,2-Benzenediol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole
(9CI) (CA INDEX NAME)

*Structurally most of these
ended up being pretty junky
unfortunately.*

*The marked
ones which would
be considered
hits.*

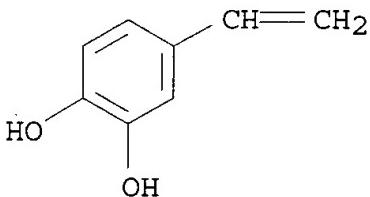
CM 1

CRN 7315-32-4
CMF C9 H8 O2



CM 2

CRN 6053-02-7
CMF C8 H8 O2

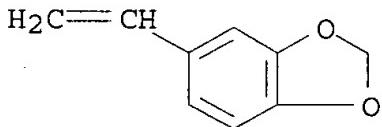


RN 398457-07-3 HCAPLUS

CN 1,2-Benzenediol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole
and 4-ethenylphenol (9CI) (CA INDEX NAME)

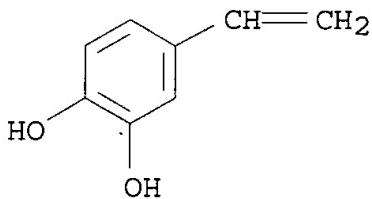
CM 1

CRN 7315-32-4
CMF C9 H8 O2

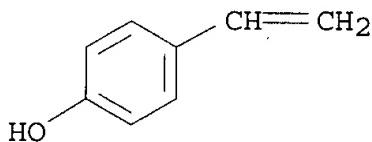


CM 2

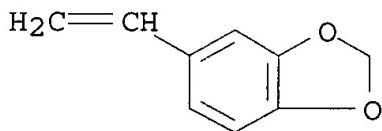
CRN 6053-02-7
CMF C8 H8 O2



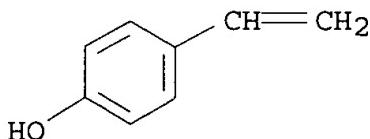
CM 3

CRN 2628-17-3
CMF C₈ H₈ ORN 398457-08-4 HCAPLUS
CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole and
1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

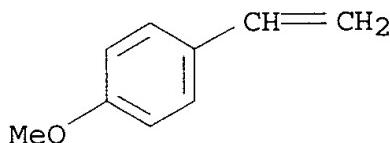
CM 1

CRN 7315-32-4
CMF C₉ H₈ O₂

CM 2

CRN 2628-17-3
CMF C₈ H₈ O

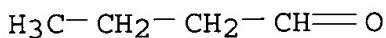
CM 3

CRN 637-69-4
CMF C9 H10 O

- IC ICM G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38
 ST electron beam **resist** onium sulfonic acid; x ray
resist onium sulfonic acid; photoacid generator onium sulfonic acid; sulfonium sulfonic acid salt **resist**;
 iodonium sulfonic acid salt **resist**
 IT Electron beam **resists**
X-ray resists
 (electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT Onium compounds
 (photoacid generator; electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT 185405-14-5P
 (binder; electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT 24979-69-9 129674-22-2 158593-28-3 159296-87-4
185405-11-2 199432-82-1 288620-15-5 321164-59-4
 325143-37-1 345212-27-3 387382-45-8 387382-49-2 398457-05-1
398457-07-3 **398457-08-4**
 (binder; electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT 185502-14-1 185502-15-2 197087-74-4
 (crosslinking agents; electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT 161679-94-3P 162846-57-3P
 (intermediate in prepn. of crosslinking agents from; electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT 66003-76-7 66003-78-9 144317-44-2 153698-46-5 258341-98-9
 270563-93-4 307976-40-5 312386-77-9 398457-16-4
 (photoacid generator; electron beam or x-ray **resist** compns. having high sensitivity and resoln.)
 IT 110726-28-8, Trisp PA
 (prep. of crosslinking agents from; electron beam or x-ray

resist compns. having high sensitivity and resoln.)

- L64 ANSWER 2 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 2003:254170 Document No. 138:262701 Positive acting
photoresist composition and imageable element. Levanon,
 Moshe; Lurie, Emmanuel; Malikov, Sergei; Naigertsik, Oleg; Postel,
 Larisa (Creo Il. Ltd., Israel). U.S. US 6541181 B1 20030401; 15
 pp., Cont.-in-part of U.S. 6,255,033. (English).. CODEN: USXXAM.
 APPLICATION: US 2000-625582 20000726. PRIORITY: US 1999-365279
 19990730.
- AB A pos. acting **photoresist** compn. that can be heat-sensitive is presented, either coated on a lithog. base, or on a printing circuit board base, and comprises a water sol. heat-sensitive resin, a novel adhesion promoter and a radiation absorbing agent-a dye or a pigment. An excellent film forming polymer that comprises **acetal** units directly pendant from the polymer **polyvinyl alc.** backbone may be the only binder resin, when other resins being optional. The solv. of the coated material in the areas exposed to near -IR laser radiation in mild alk. developers becomes considerably higher, allowing to obtain high resolved patterns of the etch-resistant material on printing circuit boards or lithog. printing plates. The compn. can be applied on the substrate from a liq. of laminated as a dry film. Sensitizers may be added to render the compn. sensitive to radiation in a non-thermal sense.
- IT 123-72-8DP, n-Butyraldehyde, cyclic **acetals** with **poly(vinyl alc.)** and react product with hydroxybenzaldehyde and/or glyoxylic acid and/or propargyl aldehyde and/or formylphenoxyacetic acid and/or isovaleraldehyde (pos. acting **photoresist** compn. and imageable element contg.)
- RN 123-72-8 HCAPLUS
 CN Butanal (9CI) (CA INDEX NAME)



- IC ICM G03C001-77
 ICS G03C001-73; G03F007-039; G03F007-09
 NCL 430275100; 430277100; 430278100; 430270100; 430905000; 430909000;
 430944000; 430326000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38
 ST pos acting **photoresist** compn imageable element **polyvinyl acetal**
 IT Polyvinyl acetals
 (esters; pos. acting **photoresist** compn. and imageable element contg.)
 IT Positive **photoresists**
 (pos. acting **photoresist** compn. and imageable element)

- IT Polyvinyl acetals
 (pos. acting **photoresist** compn. and imageable element
 contg.)
- IT Printed circuit boards
 (pos. acting **photoresist** compn. and imageable element
 for)
- IT 90-02-8DP, 2-Hydroxybenzaldehyde, cyclic **acetals** with
poly(vinyl alc.) and react product with
 butyraldehyde 100-83-4DP, 3-Hydroxybenzaldehyde, cyclic
acetals with **poly(vinyl alc.)**
 and react product with butyraldehyde 121-33-5DP, Vanillin, cyclic
acetals with **poly(vinyl alc.)**
 and react product with butyraldehyde and hydroxybenzaldehyde
 123-08-0DP, 4-Hydroxybenzaldehyde, cyclic **acetals** with
poly(vinyl alc.) and react product with
 butyraldehyde 123-72-8DP, n-Butyraldehyde, cyclic
acetals with **poly(vinyl alc.)**
 and react product with hydroxybenzaldehyde and/or glyoxylic acid
 and/or propargyl aldehyde and/or formylphenoxyacetic acid and/or
 isovaleraldehyde 298-12-4DP, Glyoxylic acid, cyclic
acetals with **poly(vinyl alc.)**
 and react product with butyraldehyde and hydroxybenzaldehyde
 590-86-3DP, Isovaleraldehyde, cyclic **acetals** with
poly(vinyl alc.) and react product with
 formylphenoxyacetic acid and hydroxybenzaldehyde 624-67-9DP,
 Propargyl aldehyde, cyclic **acetals** with **poly(vinyl alc.)** and react product with butyraldehyde
 and hydroxybenzaldehyde 708-06-5DP, 2-Hydroxy-1-naphthaldehyde,
 cyclic **acetals** with **poly(vinyl alc.)** and react
 product with butyraldehyde and hydroxybenzaldehyde
 2973-77-5DP, 3,5-Dibromo-4-hydroxybenzaldehyde, cyclic **acetals** with **poly(vinyl alc.)** and react product with butyraldehyde
 22042-71-3DP, 4-Formylphenoxyacetic acid; cyclic **acetals**
 with **poly(vinyl alc.)** and react
 product with isovaleraldehyde and hydroxybenzaldehyde
 (pos. acting **photoresist** compn. and imageable element
 contg.)
- IT 7429-90-5, Aluminum, uses 7440-47-3, Chrome, uses 7440-50-8,
 Copper, uses
 (pos. acting **photoresist** compn. and imageable element
 contg.)

L64 ANSWER 3 OF 34 HCAPLUS COPYRIGHT 2003 ACS

2002:802790 Document No. 137:331074 Electron beam or x-ray
 negative-working **resist** composition. Takahashi, Akira;
 Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai
 Tokkyo Koho JP 2002311586 A2 20021023, 73 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 2001-119723 20010418.

AB The title **resists** compn. comprises (a) a sulfonium salt or
 iodonium salt having .gtoreq.1 Ph group capable of generating an
 acid upon receiving electron beam or x-ray, (b) an alk. sol. resin,

(c) a crosslinker working on the resin upon reaction with an acid, and (d) a compd. which cleaves itself and/or in other components by receiving electron beam or x-ray but not forming Ph radical as an intermediate. The **resist** compn. further contains a N-contg. basic compd. and a surfactant. The **resist** compn. exhibited high sensitivity under high acceleration voltage conditions.

IT 349647-01-4

(electron beam or x-ray neg.-working **resist** compn.)

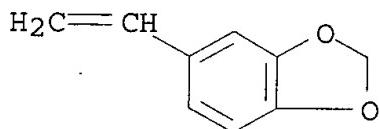
RN 349647-01-4 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

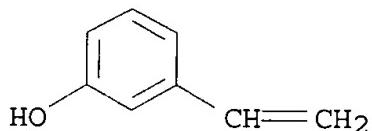
CMF C9 H8 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



IC ICM G03F007-038

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 46

ST electron beam x ray neg **resist** compn; sulfonium iodonium salt x ray neg **resist** compn; crosslinker fluorosurfactant surfactant **resist** compn

IT Electron beam **resists**

Surfactants

X-ray **resists**

(electron beam or x-ray neg.-working **resist** compn.)

IT Surfactants

(fluorosurfactants; electron beam or x-ray neg.-working

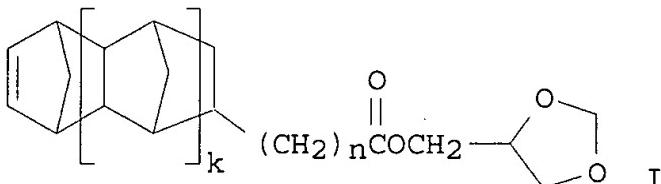
- resist compn.)
- IT Polysiloxanes, uses
(surfactant; electron beam or x-ray neg.-working resist compn.)
- IT 161679-94-3P 162846-57-3P
(crosslinker; electron beam or x-ray neg.-working resist compn.)
- IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
(crosslinker; electron beam or x-ray neg.-working resist compn.)
- IT 100-97-0, uses 110-89-4, Piperidine, uses 121-44-8,
Triethylamine, uses 134-81-6 280-42-2, 2,6-Diazabicyclo[2.2.2]octane 484-47-9, 2,4,5-Triphenylimidazole 947-19-3 1122-58-3, 4-Dimethylaminopyridine 1592-43-4 1707-68-2 2002-16-6, Phenylguanidine 3001-72-7, 1,5-Diazabicyclo[4.3.0]non-5-ene 6652-29-5 10373-78-1 24544-04-5 24650-42-8 24979-69-9 26060-56-0 32238-84-9 41556-26-7, Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate 55048-40-3 68400-54-4 68688-54-0 69432-40-2 71868-10-5 75980-60-8 79044-56-7 119137-03-0 121912-68-3 122936-95-2, 1,8-Diazabicyclo[4.3.0]non-5-ene 137909-39-8 149614-53-9 258341-98-9 345212-28-4 349647-01-4 396098-38-7 420131-94-8 420131-95-9 420131-96-0 420131-98-2 473542-90-4 473542-93-7 473542-96-0
(electron beam or x-ray neg.-working resist compn.)
- IT 144317-44-2 153698-46-5 197447-16-8 241806-76-8 258341-99-0 258872-05-8 270563-96-7 312386-77-9 343629-51-6 343629-55-0 437652-80-7 437652-81-8 473542-95-9
(photoacid; electron beam or x-ray neg.-working resist compn.)
- IT 110726-28-8, Trisp-PA
(prepn. of crosslinker for electron beam or x-ray neg.-working resist compn.)
- IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 123-86-4, Butyl acetate 1320-67-8, Propylene glycol monomethyl ether 84540-57-8, Propylene glycol monomethyl ether acetate 98516-33-7, Propylene glycol monomethyl ether propionate
(solvent; electron beam or x-ray neg.-working resist compn.)
- IT 25852-90-8 137462-24-9, Megafac F176 216679-67-3, Megafac R08
(surfactant; electron beam or x-ray neg.-working resist compn.)

L64 ANSWER 4 OF 34 HCPLUS COPYRIGHT 2003 ACS

2002:778738 Document No. 137:317915 Polycyclic compound acetal derivatives, polymers and resist compositions therefrom, and patterning process using these resist compositions. Nakashima, Mutsuo; Tachibana, Seiichiro; Watanabe, Takeru; Kinsho, Takeshi; Hasegawa, Koji; Nishi, Tsunehiro; Hatakeyama, Jun (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US

2002147290 A1 20021010, 44 pp. (English). CODEN: USXXCO.
 APPLICATION: US 2001-967946 20011002. PRIORITY: JP 2000-301933
 20001002; JP 2001-10087 20010118; JP 2001-31720 20010208.

GI



AB Cyclic acetal compds. I wherein k = 0 or 1 and n is an integer of 0 to 6 are manufd. and polymers from I or I having Me groups on the 2-position of the acetal ring are polymd. to give copolymers that are sensitive to high-energy radiation and have excellent sensitivity, resoln., and etching resistance. A typical polymer was manufd. by radical polymn. of 56.1 g 1:1 (mol ratio) mixt. of I (k = n = 0) and 1,3-dioxan-5-yl 5-norbornene-2-carboxylate with 65 g 2-ethyl-2-norbornyl 5-norbornene-2-carboxylate and 24.5 g maleic anhydride.

IT 469913-03-9P 469913-08-4P 469913-13-1P
 469913-14-2P 469913-15-3P 469913-16-4P
 469913-17-5P 469913-18-6P 469913-19-7P
 469913-20-0P

(unsatd. polycyclic compd. acetal derivs. for polymers for photoresists good etching resistance)

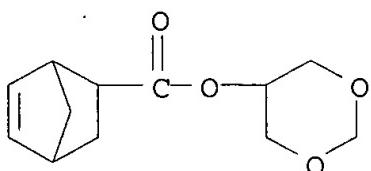
RN 469913-03-9 HCPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,3-dioxan-5-yl ester, polymer with 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2-ethylbicyclo[2.2.1]hept-2-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

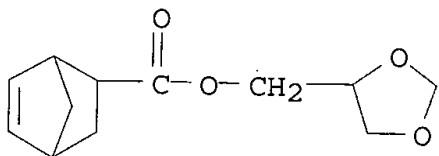
CRN 469913-00-6

CMF C12 H16 O4



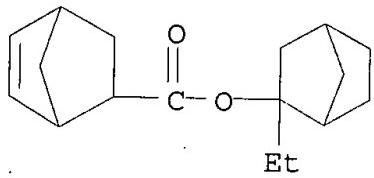
CM 2

CRN 469912-99-0
 CMF C12 H16 O4



CM 3

CRN 330596-01-5
 CMF C17 H24 O2



CM 4

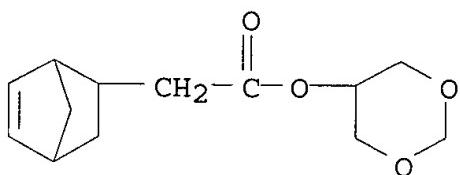
CRN 108-31-6
 CMF C4 H2 O3



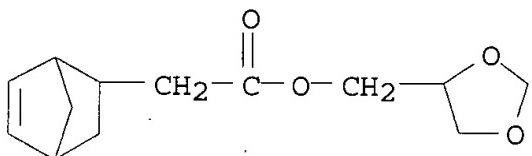
RN 469913-08-4 HCAPLUS
 CN Bicyclo[2.2.1]hept-5-ene-2-acetic acid, 1,3-dioxan-5-yl ester,
 polymer with 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-
 acetate, 2-ethylbicyclo[2.2.1]hept-2-yl bicyclo[2.2.1]hept-5-ene-2-
 carboxylate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

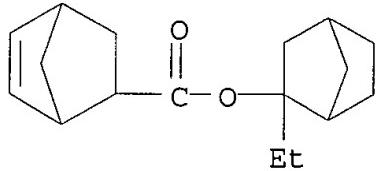
CRN 469913-07-3
 CMF C13 H18 O4



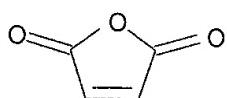
CM 2

CRN 469913-06-2
CMF C13 H18 O4

CM 3

CRN 330596-01-5
CMF C17 H24 O2

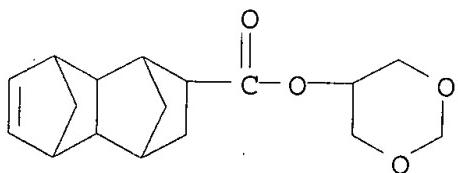
CM 4

CRN 108-31-6
CMF C4 H2 O3RN 469913-13-1 HCPLUS
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-

octahydro-, 1,3-dioxan-5-yl ester, polymer with 1,3-dioxolan-4-ylmethyl 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene-2-carboxylate, 2-ethylbicyclo[2.2.1]hept-2-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 2,5-furandione (9CI) (CA INDEX NAME)

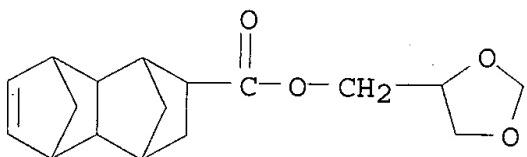
CM 1

CRN 469913-12-0
 CMF C17 H22 O4



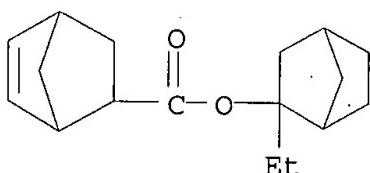
CM 2

CRN 469913-11-9
 CMF C17 H22 O4



CM 3

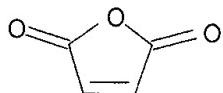
CRN 330596-01-5
 CMF C17 H24 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



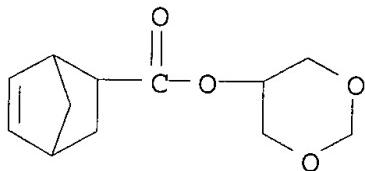
RN 469913-14-2 HCPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-cyclohexylcyclopentyl ester, polymer with 1,3-dioxan-5-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 469913-00-6

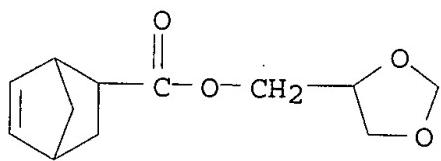
CMF C12 H16 O4



CM 2

CRN 469912-99-0

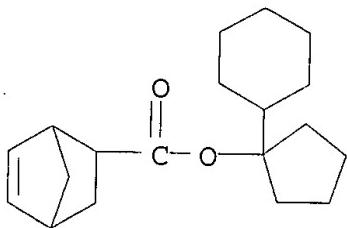
CMF C12 H16 O4



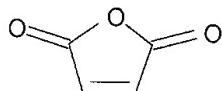
CM 3

CRN 367250-28-0

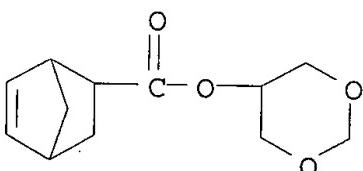
CMF C19 H28 O2



CM 4

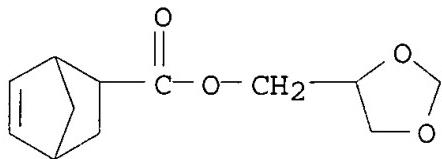
CRN 108-31-6
CMF C4 H2 O3RN 469913-15-3 HCPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-propanoic acid, .beta.- (acetyloxy)-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 1,3-dioxan-5-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

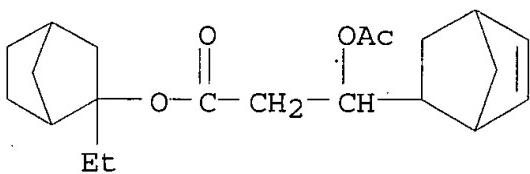
CRN 469913-00-6
CMF C12 H16 O4

CM 2

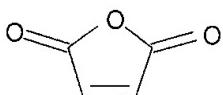
CRN 469912-99-0
CMF C12 H16 O4



CM 3

CRN 371148-04-8
CMF C21 H30 O4

CM 4

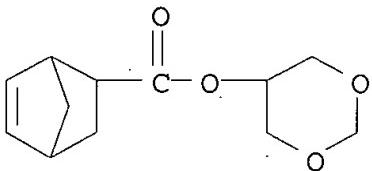
CRN 108-31-6
CMF C4 H2 O3

RN 469913-16-4 HCPLUS

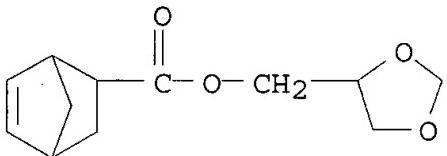
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,3-dioxan-5-yl ester,
polymer with 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-
carboxylate and 1-ethylcyclopentyl bicyclo[2.2.1]hept-5-ene-2-
carboxylate (9CI) (CA INDEX NAME)

CM 1

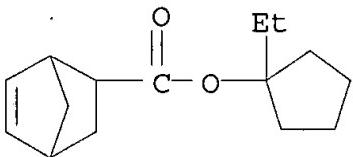
CRN 469913-00-6
CMF C12 H16 O4



CM 2

CRN 469912-99-0
CMF C12 H16 O4

CM 3

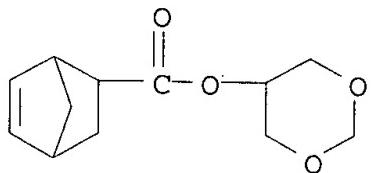
CRN 279243-69-5
CMF C15 H22 O2

RN 469913-17-5 HCAPLUS

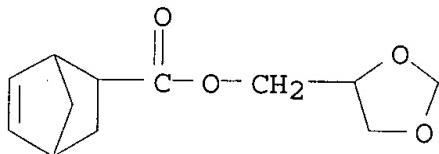
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-cyclohexylcyclopentyl ester, polymer with 1,3-dioxan-5-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

CM 1

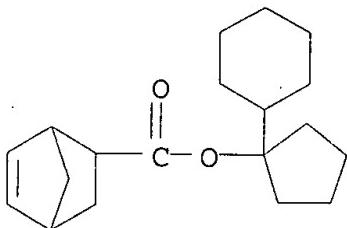
CRN 469913-00-6
CMF C12 H16 O4



CM 2

CRN 469912-99-0
CMF C₁₂ H₁₆ O₄

CM 3

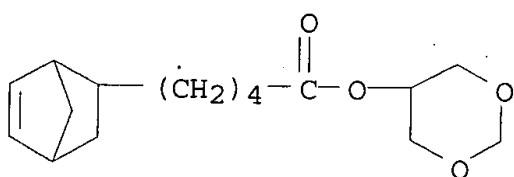
CRN 367250-28-0
CMF C₁₉ H₂₈ O₂

RN 469913-18-6 HCAPLUS

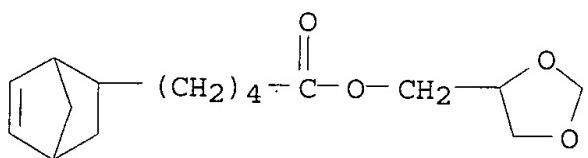
CN Bicyclo[2.2.1]hept-5-ene-2-pentanoic acid, 1,3-dioxan-5-yl ester,
polymer with 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-
pentanoate, 2-ethylbicyclo[2.2.1]hept-2-yl 2-methyl-2-propenoate and
2,5-furandione (9CI) (CA INDEX NAME)

CM 1

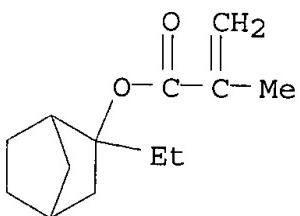
CRN 469913-02-8
CMF C₁₆ H₂₄ O₄



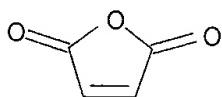
CM 2

CRN 469913-01-7
CMF C₁₆ H₂₄ O₄

CM 3

CRN 330595-98-7
CMF C₁₃ H₂₀ O₂

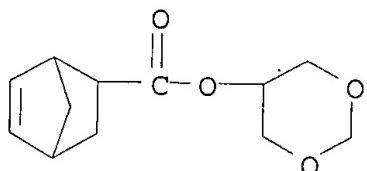
CM 4

CRN 108-31-6
CMF C₄ H₂ O₃RN 469913-19-7 HCPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,3-dioxan-5-yl ester,

polymer with 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 1-methyl-1-tricyclo[3.3.1.13,7]dec-1-ylethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

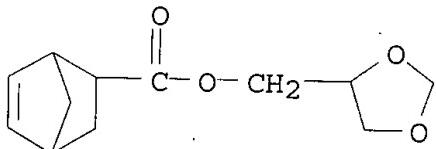
CM 1

CRN 469913-00-6
 CMF C12 H16 O4



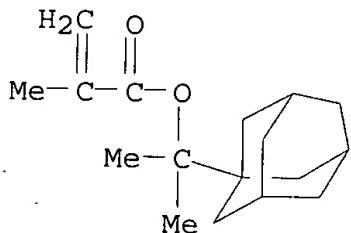
CM 2

CRN 469912-99-0
 CMF C12 H16 O4



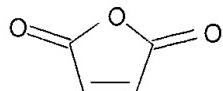
CM 3

CRN 279218-76-7
 CMF C17 H26 O2



CM 4

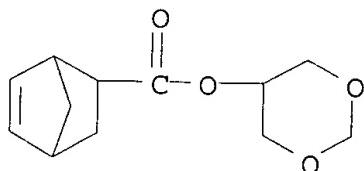
CRN 108-31-6
 CMF C4 H2 O3



RN 469913-20-0 HCPLUS
 CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1-ethylcyclopentyl ester, polymer with 1,3-dioxan-5-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 1,3-dioxolan-4-ylmethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

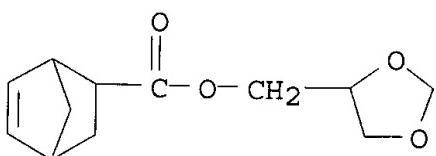
CM 1

CRN 469913-00-6
 CMF C12 H16 O4



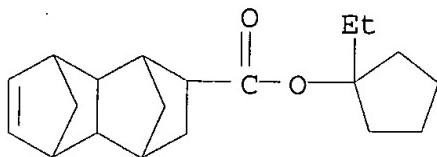
CM 2

CRN 469912-99-0
 CMF C12 H16 O4



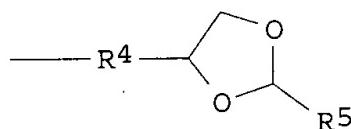
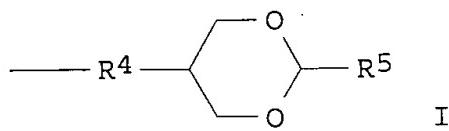
CM 3

CRN 279243-82-2
 CMF C20 H28 O2



IC ICM C08F134-02
 NCL 526266000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 24, 35
 ST dioxolanyl methyl norbornenyl lalkanecarboxylate polymer
 photoresist; maleic anhydride copolymer manuf
 photoresist; ethylnorbornyl norbornenecarboxylate copolymer
 manuf photoresist; dioxanyl norbornenecarboxylate
 copolymer manuf photoresist; tricyclododeceny lalkanecarboxylate dioxolanyl methyl polymer photoresist
 IT Polymerization
 (radical; of unsatd. polycyclic compd. acetal derivs. for polymers for photoresists good etching resistance)
 IT Photoresists
 (unsatd. polycyclic compd. acetal derivs. for polymers for photoresists good etching resistance)
 IT 5464-28-8, Glycerol formal
 (monomer precursor; unsatd. polycyclic compd. acetal derivs. for polymers for photoresists good etching resistance)
 IT 469912-99-0P 469913-00-6P 469913-01-7P 469913-02-8P
 (monomer; unsatd. polycyclic compd. acetal derivs. for polymers for photoresists good etching resistance)
 IT 469913-03-9P 469913-05-1P 469913-08-4P
 469913-10-8P 469913-13-1P 469913-14-2P
 469913-15-3P 469913-16-4P 469913-17-5P
 469913-18-6P 469913-19-7P 469913-20-0P
 (unsatd. polycyclic compd. acetal derivs. for polymers for photoresists good etching resistance)
 L64 ANSWER 5 OF 34 HCPLUS COPYRIGHT 2003 ACS
 2002:755238 Document No. 137:286456 Monomer and polymer for photoresist, photoresist composition, and phosphor layer composition for color cathode ray tube. Lee, Beom-Wook; Lim, Ik-Chul; Yoo, Seung-Joon (S. Korea). U.S. Pat. Appl. Publ. US 2002143130 A1 20021003, 11 pp. (English). CODEN: USXXCO.
 APPLICATION: US 2002-76317 20020214. PRIORITY: KR 2001-17600 20010403.

GI



II

AB Disclosed are a monomer, a polymer for a **photoresist**, a **photoresist** compn. and a phosphor layer for a cathode ray tube. The polymer has the formula: $[(CH_2-CR_1R_8-R_9)a-(CH_2-CR_1R_6-R_7)b-(CH_2-CR_1R_2-R_3)c]_n$ ($R_1 = H, CH_3$; $R_2 = (R).\alpha. (CH_2).\beta. R'$ or $(R).\beta. ((CH_2)^mO).\gamma. R'$; $R = CO, CO_2, O, OCO, OC_2O; R' = O, CO_2, OCO_2$; $\alpha. = 0, 1$; $\beta. = 0-5$; $m = 1, 2$; $\gamma. = 1-5$; $R_3 = I$ or II ; R_4 , which combines an acetal compd. and a vinyl compd., = C₁-C₅ alkyl, ether, carbonyl; $R_5 = C_1-C_5$ alkyl, ether, carbonyl; $R_6, 8 =$ single bond, $(R).\alpha. (CH_2).\beta. R'$ or $(R).\beta. ((CH_2)^mO).\gamma. R'$; $R_7 =$ hydroxyl group; $R_9 =$ carboxyl group; $a, b,$ and c each represent the mole ratio of its corresponding monomer, a and $b = 0-0.99$, and $c = 0.01-0.3$; and $n =$ d.p. of each polymer and has a value of .gtoreq. 2). The present invention relates to **photoresist** compn. for a color cathode ray tube which causes no environmental pollution and has good storage stability and high sensitivity.

IT 464918-96-5P 464918-97-6P

(monomer and polymer for **photoresist** compn., and phosphor layer compn. for color cathode ray tube)

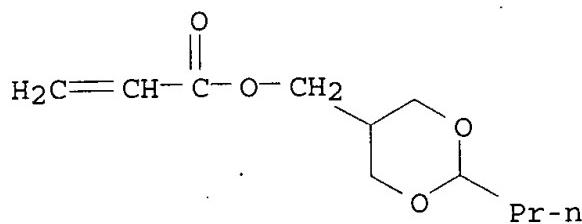
RN 464918-96-5 HCAPLUS

CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with (2-propyl-1,3-dioxan-5-yl)methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

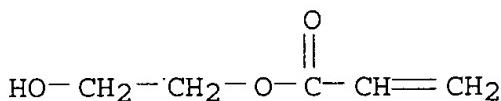
CRN 464918-93-2

CMF C11 H18 O4



CM 2

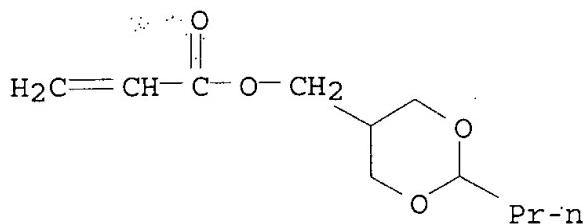
CRN 818-61-1
 CMF C5 H8 O3



RN 464918-97-6 HCAPLUS
 CN 2-Propenoic acid, polymer with 2-hydroxyethyl 2-propenoate and
 (2-propyl-1,3-dioxan-5-yl)methyl 2-propenoate (9CI) (CA INDEX NAME)

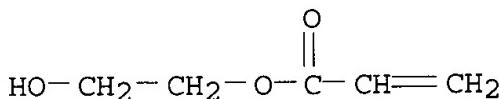
CM 1

CRN 464918-93-2
 CMF C11 H18 O4



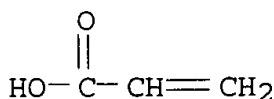
CM 2

CRN 818-61-1
 CMF C5 H8 O3



CM 3

CRN 79-10-7
 CMF C3 H4 O2



IC ICM C08F224-00
 ICS C07D319-06; C07D317-44
 NCL 526266000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38
 ST photoresist color cathode ray tube phosphor layer
 IT Cathode ray tubes
 (color; monomer and polymer for photoresist compn., and phosphor layer compn. for)
 IT Photoresists
 (monomer and polymer for photoresist compn., and phosphor layer compn. for color cathode ray tube)
 IT 464918-94-3P 464918-95-4P 464918-96-5P
464918-97-6P
 (monomer and polymer for photoresist compn., and phosphor layer compn. for color cathode ray tube)
 IT 56-81-5, Glycerol, reactions 123-72-8, Butylaldehyde 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 4704-94-3, 2-(Hydroxymethyl)-1,3-propanediol
 (prepn. of monomer and polymer for photoresist compn., and phosphor layer compn. for color cathode ray tube)
 IT 4379-23-1P 4740-64-1P 16308-77-3P 464918-93-2P
 (prepn. of monomer and polymer for photoresist compn., and phosphor layer compn. for color cathode ray tube)

L64 ANSWER 6 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 2002:676316 Document No. 137:224111 Novel polymers for UV photoresist compositions. Barclay, George G.; Caporale, Stefan J. (Shipley Company, L.L.C., USA). PCT Int. Appl. WO 2002069038 A2 20020906, 31 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.
 APPLICATION: WO 2002-US8153 20020225. PRIORITY: US 2001-PV271402 20010225.

AB The invention includes polymers that contain a polymers of the invention contain one or more (1) carbonate units and/or (2) a lactone provided by a monomer having a ring oxygen adjacent to the monomer vinyl group. The invention also provides photoresists that contain such polymers, particularly for sharp imaging at short wavelengths such as sub-200 nm.
 IT **455946-72-2P**

(novel polymers for UV photoresist compns.)

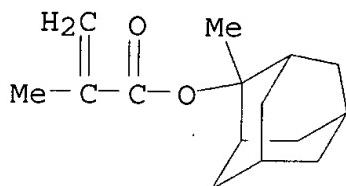
RN 455946-72-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 4,7-dihydro-1,3-

dioxepin and 2,5-furandione (9CI) (CA INDEX NAME)

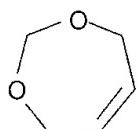
CM 1

CRN 177080-67-0
CMF C15 H22 O2



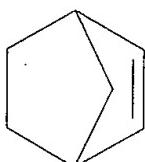
CM 2

CRN 5417-32-3
CMF C5 H8 O2



CM 3

CRN 498-66-8
CMF C7 H10



CM 4

CRN 108-31-6
CMF C4 H2 O3

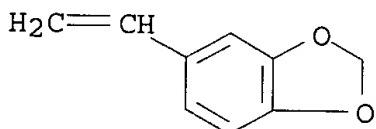


IC ICM G03F007-00
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38
 ST UV photoresist compn polymer
 IT Photoresists
 (UV; novel polymers for UV photoresist compns.)
 IT 239096-06-1P, Pinanyl methacrylate 280123-21-9P 348089-09-8P,
 8-Ethyl-8-tricyclodecanyl methacrylate
 (in prepn. of novel polymers for UV photoresist
 compns.)
 IT 108-29-2 920-46-7, Methacryloyl chloride 2386-64-3,
 Ethylmagnesiumchloride 4948-28-1, cis-Pinan-2-ol 13380-94-4
 71097-48-8, Tricyclodecanylmethacrylate
 (in prepn. of novel polymers for UV photoresist
 compns.)
 IT 455946-70-0P 455946-72-2P
 (novel polymers for UV photoresist compns.)

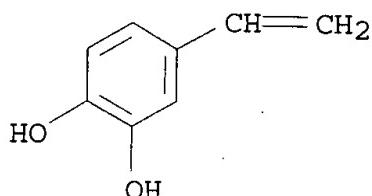
 L64 ANSWER 7 OF 34 HCPLUS COPYRIGHT 2003 ACS
 2002:636853 Document No. 137:177114 Chemically amplified x-ray
 photoresists compositions with high sensitivity and
 resolution. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan).
 Jpn. Kokai Tokkyo Koho JP 2002236358 A2 20020823, 73 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-32855 20010208.
 AB The compns. contain photoacid generators (PAG), which are decompd.
 by intramol. H radical transfer on irradn.
 IT 185405-11-2DP, dioxole ring-opened 185405-14-5P
 (chem. amplified x-ray photoresists compns. with high
 sensitivity and resoln.)
 RN 185405-11-2 HCPLUS
 CN 1,2-Benzenediol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole
 (9CI) (CA INDEX NAME)

CM 1

CRN 7315-32-4
 CMF C9 H8 O2



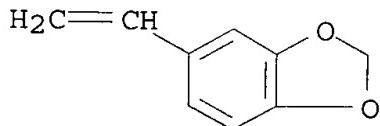
CM 2

CRN 6053-02-7
CMF C8 H8 O2

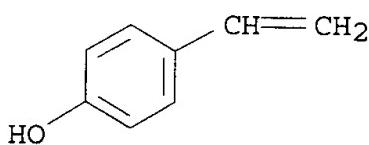
RN 185405-14-5 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4
CMF C9 H8 O2

CM 2

CRN 2628-17-3
CMF C8 H8 O

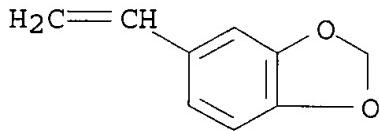
IT 349647-01-4 398457-07-3 398457-08-4

(chem. amplified x-ray photoresists compns. with high sensitivity and resoln.)

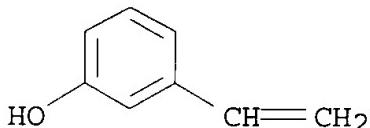
RN 349647-01-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4
CMF C9 H8 O2

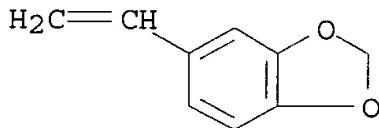
CM 2

CRN 620-18-8
CMF C8 H8 O

RN 398457-07-3 HCAPLUS

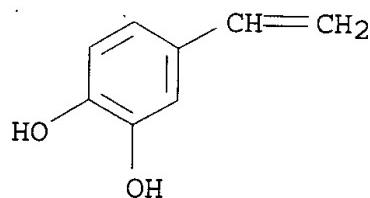
CN 1,2-Benzenediol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole
and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

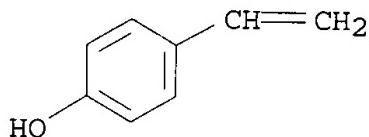
CRN 7315-32-4
CMF C9 H8 O2

CM 2

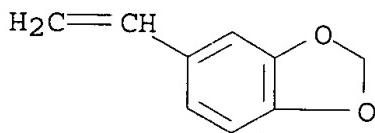
CRN 6053-02-7
CMF C8 H8 O2



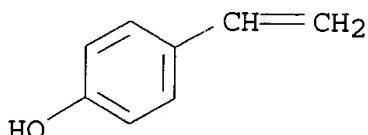
CM 3

CRN 2628-17-3
CMF C₈ H₈ ORN 398457-08-4 HCPLUS
CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole and
1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

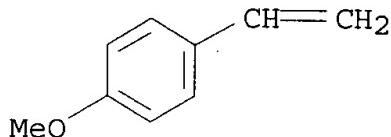
CM 1

CRN 7315-32-4
CMF C₉ H₈ O₂

CM 2

CRN 2628-17-3
CMF C₈ H₈ O

CM 3

CRN 637-69-4
CMF C9 H10 O

- IC ICM G03F007-004
ICS G03F007-004; C08K005-10; C08K005-36; C08L101-00; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photoresist chem amplification x ray sensitivity;
photoacid generator x ray photoresist resoln
IT X-ray resists
(chem. amplified x-ray photoresists compns. with high sensitivity and resoln.)
IT 691-64-5DP, reaction products with p-hydroxystyrene polymers
24979-70-2DP, VP 8000, reaction products with di-tert-Bu dicarbonate
24979-74-6P, p-Hydroxystyrene-styrene copolymer 160309-96-6P,
p-Acetoxyxystyrene-tert-butyl methacrylate copolymer
(binder; chem. amplified x-ray photoresists compns.
with high sensitivity and resoln.)
IT 24979-69-9, Phenol, 3-ethenyl-, homopolymer 24979-70-2, VP 15000
(binder; chem. amplified x-ray photoresists compns.
with high sensitivity and resoln.)
IT 65109-80-0P 75840-13-0P 212555-24-3P, 4-Cyclohexylphenoxyethyl vinyl ether 448194-90-9P
(chem. amplified x-ray photoresists compns. with high sensitivity and resoln.)
IT 185405-11-2DP, dioxole ring-opened 185405-14-5P
321164-59-4P
(chem. amplified x-ray photoresists compns. with high sensitivity and resoln.)
IT 50-00-0, Formaldehyde, reactions 106-42-3, p-Xylene, reactions
110-01-0, Tetrahydrothiophene 110-75-8, 2-Chloroethyl vinyl ether
110-87-2, 3,4-Dihydro-2H-pyran 577-16-2, 2'-Methylacetophenone
1131-60-8, p-Cyclohexylphenol 1493-13-6, Trifluoromethanesulfonic acid 3240-34-4, Iodobenzenediacetate 5292-43-3, tert-Butyl bromoacetate 27126-76-7, [Hydroxy(tosyloxy)iodo]benzene 76937-83-2, .alpha.,.alpha.,.alpha.',.alpha.',.alpha.'',.alpha.''-Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8, 1-[.alpha.-Methyl-.alpha.-(4'-hydroxyphenyl)ethyl]-4-[.alpha.',.alpha.'-bis(4''-hydroxyphenyl)ethyl]benzene 148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane 153698-47-6,

- Cumyl bromoacetate
 (chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 129674-22-2
 158593-28-3 159296-87-4 199432-82-1 288620-13-3 288620-15-5
 289706-85-0 325143-37-1 345212-27-3 **349647-01-4**
 359434-80-3 372968-15-5 387382-45-8 387382-49-2 387868-58-8
 398457-05-1 **398457-07-3** **398457-08-4**
 (chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 162846-57-3P
 (crosslinker; chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 161679-94-3P
 (crosslinker; chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 3089-11-0 17464-88-9 32449-09-5 185502-11-8 185502-14-1
 185502-15-2 197087-74-4
 (crosslinker; chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 196709-88-3P
 (dissolving inhibition agents; chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 448194-91-0 448194-93-2 448194-94-3 448194-95-4 448194-96-5
 448194-97-6 448194-98-7 448194-99-8 448195-00-4 448195-01-5
 448195-02-6 448195-03-7 448195-04-8 448195-05-9 448195-06-0
 448195-07-1 448195-08-2 448195-10-6 448195-12-8 448195-14-0
 448195-16-2 448195-18-4 448195-20-8 448195-22-0
 (photoacid generator; chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)
- IT 352517-77-2P 448194-87-4P 448194-89-6P
 (photoacid generator; chem. amplified x-ray **photoresists** compns. with high sensitivity and resoln.)

L64 ANSWER 8 OF 34 HCAPLUS COPYRIGHT 2003 ACS

2002:539334 Document No. 137:101422 Electronic beam- or X-ray sensitive negative **photoresist** compositions giving high-resolution rectangular profiles. Takahashi, Omote; Shirakawa, Hiroshi; Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002202602 A2 20020719, 52 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-401984 20001228.

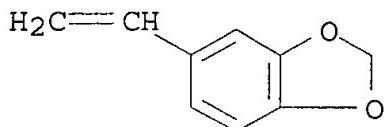
AB The **photoresist** compns. comprise (A) photoacid generators, (B) water-insol. and alkali-sol. resins, (C) crosslinkers for curing the resins in the presence of acids, and (D) compds. for increasing charge mobility of the compns. The electron mobility modifiers may be 1,3,4-oxadiazole derivs.

IT **349647-01-4**
 (electron-beam or X-ray chem. amplified neg. **photoresists** with high resoln. contg. charge mobility modifiers)

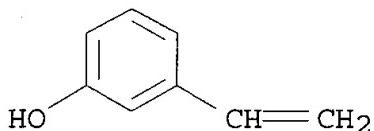
RN 349647-01-4 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
 (CA INDEX NAME)

CM 1

CRN 7315-32-4
CMF C9 H8 O2

CM 2

CRN 620-18-8
CMF C8 H8 O

IC ICM G03F007-038
ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST neg **photoresist** chem amplification x ray; electron **photoresist** resoln charge mobility modifier; oxadiazole charge mobility modifier neg **photoresist**

IT Negative **photoresists**
X-ray **resists**

(electron-beam or X-ray chem. amplified neg. **photoresists** with high resoln. contg. charge mobility modifiers)

IT 1103-59-9 2787-83-9 61843-06-9 138372-67-5 148044-16-0
184101-39-1 442655-35-8 442655-36-9 442655-37-0 442655-38-1
442655-39-2 442655-40-5 442655-41-6 442655-42-7 442655-43-8
442655-44-9 442655-45-0

(charge mobility modifier; electron-beam or X-ray chem. amplified neg. **photoresists** with high resoln. contg. charge mobility modifiers)

IT 162846-57-3P
(crosslinker; electron-beam or X-ray chem. amplified neg. **photoresists** with high resoln. contg. charge mobility modifiers)

IT 161679-94-3P
(crosslinker; electron-beam or X-ray chem. amplified neg. **photoresists** with high resoln. contg. charge mobility modifiers)

IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
 (crosslinker; electron-beam or X-ray chem. amplified neg.
photoresists with high resln. contg. charge mobility
 modifiers)

IT 105649-65-8DP, 3-t-Butoxystyrene homopolymer, hydrolyzed
 149614-53-9DP, hydrolyzed 345212-28-4DP, hydrolyzed
 396098-38-7DP, hydrolyzed
 (electron-beam or X-ray chem. amplified neg. **photoresists**
 with high resln. contg. charge mobility modifiers)

IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 (electron-beam or X-ray chem. amplified neg. **photoresists**
 with high resln. contg. charge mobility modifiers)

IT 32238-84-9 219838-71-8 349647-01-4 420131-94-8
 420131-95-9 420131-96-0 420131-98-2
 (electron-beam or X-ray chem. amplified neg. **photoresists**
 with high resln. contg. charge mobility modifiers)

L64 ANSWER 9 OF 34 HCAPLUS COPYRIGHT 2003 ACS

2002:538438 Document No. 137:101420 Electron beam- or X-ray-sensitive
 chemically amplified negative **photoresist** compositions
 with high sensitivity and resolution. Takahashi, Omote; Shirakawa,
 Hiroshi; Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn.
 Kokai Tokkyo Koho JP 2002202601 A2 20020719, 51 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 2000-401983 20001228.

AB The **photoresist** compns. comprise (A) photoacid generators,
 (B) water-insol. and alkali-sol. resins, (C) crosslinkers for curing
 the resins in the presence of acids, and (D) compds. for increasing
 hole mobility of the compns.

IT 443971-70-8

(electron-beam or X-ray chem. amplified neg. **photoresists**
 with high sensitivity and resln. contg. hole mobility modifiers)

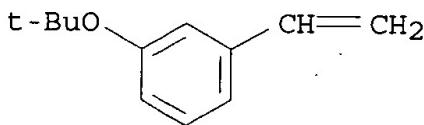
RN 443971-70-8 HCAPLUS

CN 1,3-Benzodioxole, 5-ethenyl-, polymer with 1-(1,1-dimethylethoxy)-3-
 ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 105612-79-1

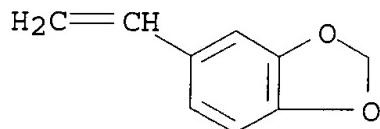
CMF C12 H16 O



CM 2

CRN 7315-32-4

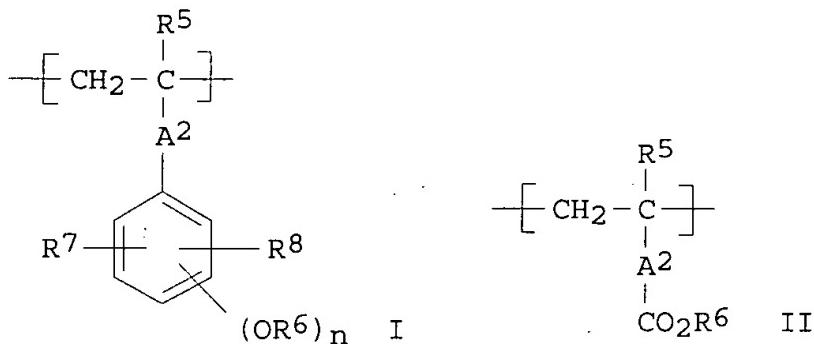
CMF C9 H8 O2



IC ICM G03F007-038
 ICS C08K005-00; C08L101-00; G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST neg **photoresist** chem amplification x ray; electron **photoresist** resoln hole mobility modifier
 IT Negative **photoresists**
 X-ray **resists**
 (electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 162846-57-3P
 (crosslinker; electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 161679-94-3P
 (crosslinker; electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
 (crosslinker; electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 105649-65-8DP, 3-t-Butoxystyrene homopolymer, hydrolyzed
 155168-25-5DP, hydrolyzed 406685-56-1DP, hydrolyzed
 406685-57-2DP, hydrolyzed
 (electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 (electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 32238-84-9 121912-68-3 443971-68-4 443971-70-8
 443972-08-5 443972-89-2 443975-09-5
 (electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)
 IT 81-88-9 86-28-2 517-51-1 603-34-9 4197-25-5 6543-20-0
 7385-67-3 7520-01-6 15866-36-1 38215-36-0 51325-91-8
 68842-66-0 81734-52-3 82532-74-9 83054-80-2 84699-37-6
 91175-19-8 105389-36-4 118418-01-2 135804-06-7 139092-78-7
 139417-53-1 145693-79-4 153556-84-4 442652-50-8
 (hole mobility modifier; electron-beam or X-ray chem. amplified neg. **photoresists** with high sensitivity and resoln. contg. hole mobility modifiers)

2002:480573 Document No. 137:54627 Electron-beam or x-ray positive-working **resists** showing high sensitivity and resolution, and enhanced pattern profiles. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002182392 A2 20020626, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-376059 20001211.

GI



AB The pos. **resist** compns. contain (A) resins having repeating units I and/or II [R5 = H, halogen, CN, (substituted) alkyl, haloalkyl; OR6, CO₂R6 = acid-decompg., alkali-sol. group; R7, R8 = H, OH, halogen, CN, (substituted) alkoxy, acyl, alkyl, cycloalkyl, alkenyl, aralkyl, aryl; A2 = single bond, (substituted) divalent alkynylene, alkenylene, cycloalkylene, arylene, OCOR9, COOR10, CONR11R12; R9, R10, R12 = single bond, divalent alkylene, alkenylene, cycloalkylene, or arylene which may have ether, ester, amide, urethane, ureido and may be substituted; R11 = H, (substituted) alkyl, cycloalkyl, aralkyl, aryl; n = 1-3 integer; R6, R6 and R7 or R8, or R7 and R8 may be bonded together] and (B) disulfonic acid group-contg. compds.

IT 438535-80-9P

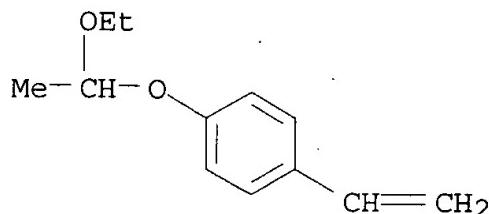
(electron-beam or x-ray pos.-working resists showing high sensitivity and resoln., and enhanced pattern profiles)

RN 438535-80-9 HCAPLUS

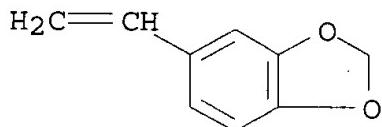
CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole and
1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

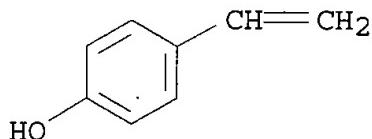
CRN 157057-20-0
CMF C12 H16 O2



CM 2

CRN 7315-32-4
CMF C9 H8 O2

CM 3

CRN 2628-17-3
CMF C8 H8 O

IC ICM G03F007-039
ICS C07C381-00; C08K005-41; C08L101-12; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
ST electron beam pos **resist** styrene polymer; x ray pos
resist styrene polymer; disulfonic acid photoacid generator
pos **resist**
IT Electron beam **resists**
X-ray **resists**
(pos.-working; electron-beam or x-ray pos.-working
resists showing high sensitivity and resoln., and
enhanced pattern profiles)
IT 153698-54-5 153698-63-6
(dissoln. inhibitor; electron-beam or x-ray pos.-working
resists showing high sensitivity and resoln., and

enhanced pattern profiles)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction products with Et vinyl ether 158593-28-3P 200808-68-0P
 438535-75-2DP, hydrolyzed 438535-77-4P 438535-78-5P
438535-80-9P 438535-82-1P 438535-83-2P 438535-84-3P
 438535-85-4P 438535-86-5P 438535-87-6P 438535-88-7P
 (electron-beam or x-ray pos.-working **resists** showing high sensitivity and resoln., and enhanced pattern profiles)

IT 1886-74-4 10409-07-1 13603-79-7 58113-98-7 91222-48-9
 91222-53-6 124737-97-9 124738-06-3 194712-93-1 426832-92-0
 (photoacid generator; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resoln., and enhanced pattern profiles)

L64 ANSWER 11 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 2002:119600 Document No. 136:191683 Negatively working electron-beam or x-ray **resist** composition. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002049150 A2 20020215, 35 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-235915 20000803.

AB The compn. contains (A) acid and/or radical generators by irradn. of electron beam or x-ray, (B) water-insol. and alk.-sol. polymers, (C) crosslinking agents, (D) compds. having .gtoreq.1 acid- and/or radically polymerizable unsatd. linkage in a mol., and (E) F-contg. and/or silicone surfactants. The compn. shows high sensitivity and gives high-resoln. **resist** images with good developability to be useful for fine patterning in manuf. of semiconductor devices.

IT 185405-14-5 349647-01-4 349647-03-6
 (neg. working electron-beam or x-ray **resist** compn.)

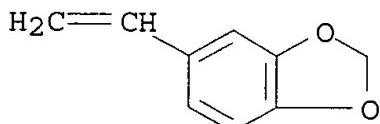
RN 185405-14-5 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
 (CA INDEX NAME)

CM 1

CRN 7315-32-4

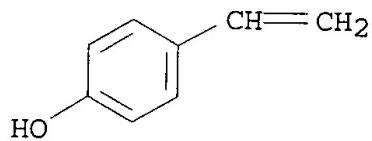
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



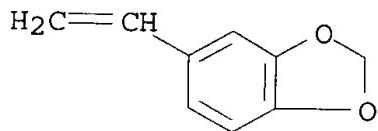
RN 349647-01-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

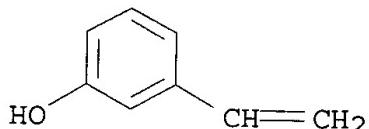
CMF C9 H8 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



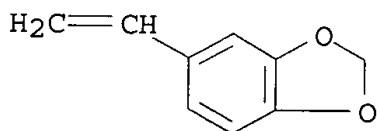
RN 349647-03-6 HCPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and
5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

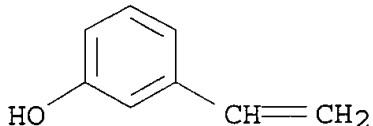
CM 1

CRN 7315-32-4

CMF C9 H8 O2



CM 2

CRN 620-18-8
CMF C8 H8 O

CM 3

CRN 100-42-5
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

- IC ICM G03F007-038
ICS C08F002-44; C08F291-00; G03F007-004; G03F007-027; G03F007-029;
G03F007-033; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 7.6
- ST neg electron beam x ray **resist** surfactant; semiconductor
device fine patterning electron beam **resist**; fluorine
silicone surfactant **resist** electron beam x ray
- IT Surfactants
(F- or silicone-contg.; neg. working electron-beam or x-ray
resist compn.)
- IT Polysiloxanes, uses
(KP 341, surfactant; neg. working electron-beam or x-ray
resist compn.)
- IT X-ray **resists**
(neg. working electron-beam or x-ray **resist** compn.)
- IT Electron beam **resists**
(neg.-working; neg. working electron-beam or x-ray **resist**
compn.)
- IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
(acid generator from; neg. working electron-beam or x-ray
resist compn.)
- IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
(acid generator from; neg. working electron-beam or x-ray
resist compn.)
- IT 71-43-2, Benzene, reactions 75-59-2, Tetramethylammonium hydroxide
832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl

sulfoxide 2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid,
 reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium
 iodide
 (acid generator from; neg. working electron-beam or x-ray
resist compn.)
 IT 270563-93-4 270563-96-7 279244-39-2 279244-43-8 349647-26-3
 (acid generator; neg. working electron-beam or x-ray
resist compn.)
 IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 258341-98-9P
 (acid generator; neg. working electron-beam or x-ray
resist compn.)
 IT 162846-57-3P
 (crosslinking agent from; neg. working electron-beam or x-ray
resist compn.)
 IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 (crosslinking agent from; neg. working electron-beam or x-ray
resist compn.)
 IT 161679-94-3P
 (crosslinking agent; neg. working electron-beam or x-ray
resist compn.)
 IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
 (crosslinking agent; neg. working electron-beam or x-ray
resist compn.)
 IT 171429-59-7P 173786-80-6DP, hydrolyzed 349647-07-0P
 (neg. working electron-beam or x-ray **resist compn.**)
 IT 15625-89-5, Trimethylolpropane triacrylate 17831-71-9,
 Tetraethylene glycol diacrylate 24979-73-5 29570-58-9,
 Dipentaerythritol hexaacrylate 110123-10-9 **185405-14-5**
349647-01-4 349647-03-6 349647-04-7
 349647-05-8 349647-06-9 399034-03-8
 (neg. working electron-beam or x-ray **resist compn.**)
 IT 66003-78-9
 (photoacid generator; neg. working electron-beam or x-ray
resist compn.)
 IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08
 (surfactant; neg. working electron-beam or x-ray **resist**
compn.)

L64 ANSWER 12 OF 34 HCPLUS COPYRIGHT 2003 ACS
 2002:119599 Document No. 136:191682 Negatively working electron-beam
 or x-ray **resist** composition. Aogo, Toshiaki (Fuji Photo
 Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002049149 A2
 20020215, 36 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 2000-233120 20000801.

AB The compn. contains (A) acid and/or radical generators by irradn. of
 electron beam or x-ray, (B) water-insol. and alk.-sol. polymers, (C)
 crosslinking agents, (D) compds. having .gtoreq.1 acid- and/or
 radically polymerizable unsatd. linkage in a mol., and (E) 40-90
 wt.% .gtoreq.1 solvents selected from propylene glycol Me ether
 acetate, propylene glycol Me ether propionate, Me
 3-methoxypropionate, Et 3-methoxypropionate, Me 3-ethoxypropionate,

and Et 3-ethoxypropionate and 10-60 wt.% solvents selected from propylene glycol Me ether, propylène glycol Et ether, Me lactate, Et lactate, and diacetonealc. The compn. shows high sensitivity and gives high-resoln. **resist** images with good developability to be useful for fine patterning in manuf. of semiconductor devices.

IT 185405-14-5 349647-01-4 349647-03-6

(neg. working electron-beam or x-ray **resist** compn.)

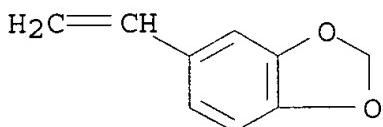
RN 185405-14-5 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

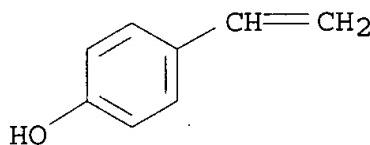
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



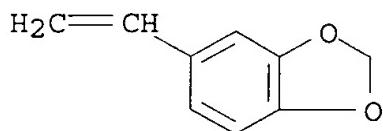
RN 349647-01-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

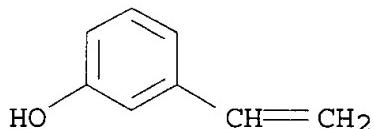
CMF C9 H8 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



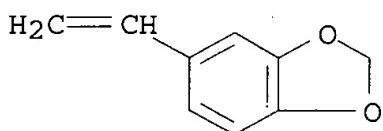
RN 349647-03-6 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and
5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

CM 1

CRN 7315-32-4

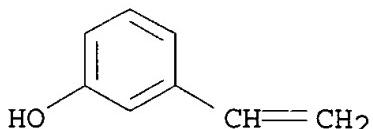
CMF C9 H8 O2



CM 2

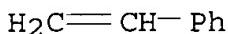
CRN 620-18-8

CMF C8 H8 O



CM 3

CRN 100-42-5
CMF C8 H8



- IC ICM G03F007-038
ICS C08K005-00; C08L101-12; G03F007-004; G03F007-027; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 76
ST neg electron beam x ray **resist** solvent; semiconductor
device fine patterning electron beam **resist**
IT X-ray **resists**
(neg. working electron-beam or x-ray **resist** compn.)
IT Electron beam **resists**
(neg.-working; neg. working electron-beam or x-ray **resist**
compn.)
IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
(acid generator from; neg. working electron-beam or x-ray
resist compn.)
IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
(acid generator from; neg. working electron-beam or x-ray
resist compn.)
IT 71-43-2, Benzene, reactions 75-59-2, Tetramethylammonium hydroxide
832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl
sulfoxide 2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid,
reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium
iodide
(acid generator from; neg. working electron-beam or x-ray
resist compn.)
IT 270563-93-4 270563-96-7 279244-39-2 279244-43-8 349647-26-3
(acid generator; neg. working electron-beam or x-ray
resist compn.)
IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
258341-98-9P
(acid generator; neg. working electron-beam or x-ray
resist compn.)
IT 162846-57-3P
(crosslinking agent from; neg. working electron-beam or x-ray
resist compn.)
IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
(crosslinking agent from; neg. working electron-beam or x-ray
resist compn.)
IT 161679-94-3P
(crosslinking agent; neg. working electron-beam or x-ray
resist compn.)
IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
(crosslinking agent; neg. working electron-beam or x-ray
resist compn.)
IT 130501-59-6P 173786-80-6DP, hydrolyzed 349647-07-0P

IT (neg. working electron-beam or x-ray **resist** compn.)
 15625-89-5, Trimethylolpropane triacrylate 17831-71-9,
 Tetraethylene glycol diacrylate 24979-73-5 29570-58-9,
 Dipentaerythritol hexaacrylate 110123-10-9 **185405-14-5**
349647-01-4 349647-03-6 349647-04-7
349647-05-8 349647-06-9 399034-03-8
 (neg. working electron-beam or x-ray **resist** compn.)

IT 66003-78-9
 (photoacid generator; neg. working electron-beam or x-ray
resist compn.)

IT 97-64-3, Ethyl lactate 123-42-2, Diacetonealcohol 763-69-9,
 Ethyl 3-ethoxypropionate 1320-67-8, Propylene glycol monomethyl
 ether 3852-09-3, Methyl 3-methoxypropionate 84540-57-8,
 Propylene glycol monomethyl ether acetate
 (solvent; neg. working electron-beam or x-ray **resist**
 compn.)

L64 ANSWER 13 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 2002:99073 Document No. 136:175460 Electron beam- and x-ray-sensitive
 negative-working **resists** composition for semiconductor
 device fabrication. Aogo, Toshiaki; Adegawa, Yutaka; Yagihara,
 Morio (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 2002040656 A2 20020206, 48 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2000-219253 20000719.

AB The title compn. contains a radical generator, an alkali-sol.
 water-insol. resin, and radical polymerizable compds. having
 .gtoreq.1 polymerizable unsat. groups, wherein the alkali-sol.
 water-insol. resin is an olefinic polymer having aryl groups with an
 alkoxy substituent. The compn., which contains the alkali-sol.
 water-insol. resin, provides **photoresists** of the high
 sensitivity, the high resoln., and the good pattern profile.

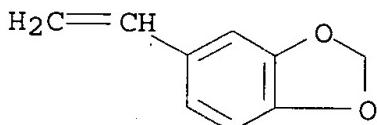
IT **185405-14-5P**
 (electron-beam and x-ray-sensitive neg.-working **resists**
 compn. for semiconductor device fabrication)

RN 185405-14-5 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
 (CA INDEX NAME)

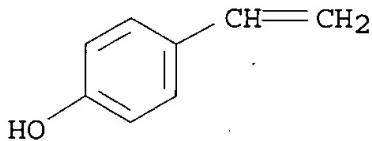
CM 1

CRN 7315-32-4
 CMF C9 H8 O2



CM 2

CRN 2628-17-3
 CMF C8 H8 O



IC ICM G03F007-038
 ICS G03F007-038; C08F002-44; C08F002-54; C08F290-00; G03F007-033;
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 76

ST electron beam x ray sensitive neg working **resist** compn

IT Semiconductor device fabrication
 (electron-beam and x-ray-sensitive neg.-working **resists** compn. for semiconductor device fabrication)

IT Electron beam **resists**
 X-ray **resists**
 (neg.-working; electron-beam and x-ray-sensitive neg.-working **resists** compn. for semiconductor device fabrication)

IT 24979-70-2DP, 4-Hydroxystyrene homopolymer, ether with chloromethylstyrene 24979-70-2P, 4-Hydroxystyrene homopolymer 30030-25-2DP, ester with 4-hydroxystyrene homopolymer 54175-13-2P, 4-Hydroxystyrene homopolymer methacrylate 130501-59-6P, 4-Hydroxystyrene homopolymer acetate ester 173786-80-6DP, 4-Acetoxyxystyrene-4-methoxystyrene copolymer, partially hydrolyzed 185405-14-5P 345212-25-1P 345212-30-8P 349647-07-0P, 2-Methacryloxyethyl p-hydroxybenzoate-2-hydroxyethyl acrylate-acrylonitrile copolymer 349652-48-8P 389795-44-2P, 4-Hydroxystyrene homopolymer 4-Styrenesulfonate 396098-37-6P 396098-38-7P 396098-39-8P 396098-40-1P
 (electron-beam and x-ray-sensitive neg.-working **resists** compn. for semiconductor device fabrication)

L64 ANSWER 14 OF 34 HCPLUS COPYRIGHT 2003 ACS
 2001:581585 Document No. 135:160156 Multi layered **resists** containing acid-sensitive crosslinking agent in lower **resist** layer. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001215727 A2 20010810, 59 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-28235 20000204.

AB The title **resist** has a first **resist** layer, which contains a resin prep'd. from a styrene deriv., and a second **resist** layer, which contains a resin contg. Si and a radiation-sensitive acid generator, on a substrate, wherein the first **resist** layer contains a heat-sensitive acid-generator and an acid-sensitive crosslinking agent. The

resist, which contains an acid-sensitive crosslinking agent in the first **resist** layer, provides the good contact between the first **resist** and the second **resist** and provides the high resoln.

IT 353295-40-6

(crosslinking resin in first **resist** layer of multi layered **resists**)

RN 353295-40-6 HCAPLUS

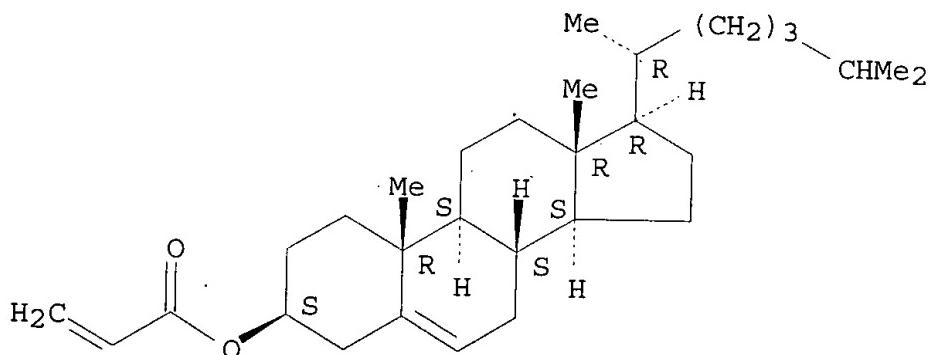
CN Cholest-5-en-3-ol (3. β .)-, 2-propenoate, polymer with 5-ethenyl-1,3-benzodioxole and 2-(2-hydroxyethoxy)ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 26089-39-4

CMF C30 H48 O2

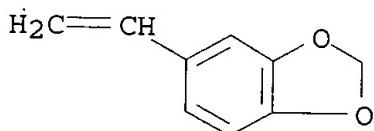
Absolute stereochemistry.



CM 2

CRN 7315-32-4

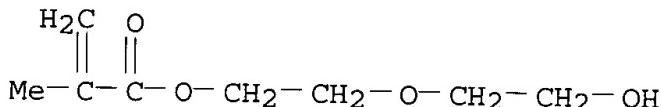
CMF C9 H8 O2



CM 3

CRN 2351-43-1

CMF C8 H14 O4



IC ICM G03F007-26
 ICS C08F212-04; C08F220-16; C08F220-20; C08K005-00; C08L025-00;
 C08L033-00; G03F007-039; G03F007-075; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST multi layered **resist** acid sensitive crosslinking agent
 layer
 IT **Photoresists**
 (far UV-sensitive, multi layered; multi layered **resists**)
)
 IT Semiconductor device fabrication
 (multi layered **resists**)
 IT 353295-30-4 353295-32-6 353295-33-7 353295-34-8 353295-36-0
 353295-37-1 353295-38-2 **353295-40-6** 353295-42-8
 353295-44-0 353295-45-1 353295-46-2 353295-47-3 353295-48-4
 353295-49-5 353295-50-8 353295-51-9 353295-52-0 353297-30-0
 353297-33-3
 (crosslinking resin in first **resist** layer of multi
 layered **resists**)
 IT 531-18-0, Hexamethylolmelamine 26445-15-8, Tetramethylolmelamine
 (heat-sensitive crosslinking agent for multi layered
resists)
 IT 74-88-4D, Methyl iodide, reaction product with acrylic acid polymer
 (multi layered **resists**)
 IT 335430-18-7P, Trimethylallylsilane-maleic anhydride-acrylonitrile
 copolymer, ester with t-butanol and methanol 353295-28-0P
 353296-97-6P
 (multi layered **resists**)

L64 ANSWER 15 OF 34 HCPLUS COPYRIGHT 2003 ACS
 2001:524739 Document No. 135:114444 Electron beam or x-ray
 negative-working **resist** composition. Aoai, Toshiaki;
 Adegawa, Yutaka; Yagihara, Morio (Fuji Photo Film Co., Ltd., Japan).
 Eur. Pat. Appl. EP 1117004 A2 20010718, 85 pp. DESIGNATED STATES:
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP
 2001-100113 20010112. PRIORITY: JP 2000-4766 20000113; JP
 2000-84469 20000324.

AB The invention relates to a neg.-working **resist** compn.
 useful for super microlithog. such as VLSI and high-capacity
 microchips and to a compn. capable of forming microfine patterns
 using X-rays and an electron beam, and to a compn. suitable for
 working of semiconductor devices using an electron beam. A
 neg.-working **resist** compn. for electron beams or x-rays
 comprises (a) a compd. generating an acid and/or radical species by

the irradn. of electron beams or x-rays, (b) a resin which is insol. in H₂O and sol. in an alkali aq. soln., (c) a crosslinking agent causing crosslinking with the resin of component (b) by the action of an acid, and (d) a compd. having .gtoreq.1 unsatd. bond capable of being polymd. by an acid and/or a radical, and a neg.-working resist compn. for electron beams or x-rays comprising (a) a compd. generating an acid and/or radical species by the irradn. of electron beams or x-rays, (b') a resin having .gtoreq.1 unsatd. bond polymerizable by an acid and/or an alkali, which is insol. in H₂O but sol. in an alkali aq. soln., and (c) a crosslinking agent causing crosslinking with the resin (b') by the action of an acid, are disclosed.

IT 185405-14-5P 349647-01-4P 349647-03-6P

(synthesis of alkali-sol. resin for neg.-working
photoresist compn. for X-ray or electron beam lithog.)

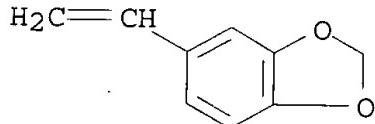
RN 185405-14-5 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

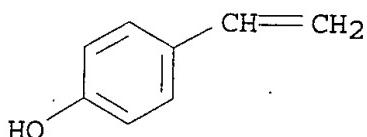
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



RN 349647-01-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

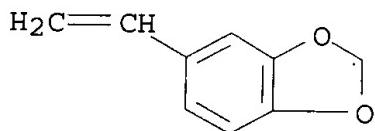
CM 1

CRN 7315-32-4

Lee 09/966, 958

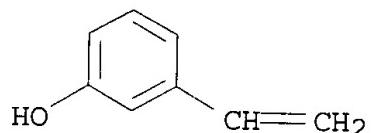
Page 73

CMF C9 H8 O2



CM 2

CRN 620-18-8
CMF C8 H8 O

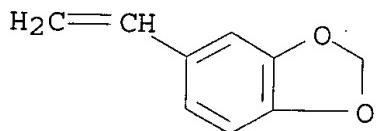


RN 349647-03-6 HCPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and
5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

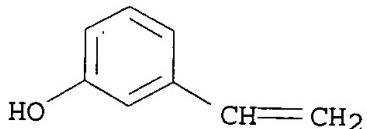
CM 1

CRN 7315-32-4
CMF C9 H8 O2

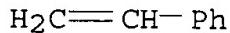


CM 2

CRN 620-18-8
CMF C8 H8 O



CM 3

CRN 100-42-5
CMF C8 H8

- IC ICM G03F007-038
 ICS G03F007-004; G03F007-028
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 36, 76
- ST electron beam x ray neg **photoresist** crosslinking hydroxystyrene polymer
- IT **Photoresists**
 (chem.-amplified; neg.-working **photoresist** compn. for X-ray or electron beam lithog. contg. alkali-sol. resin and acidic crosslinking agent)
- IT Crosslinking agents
 Electron beam lithography
 X-ray lithography
 (neg.-working **photoresist** compn. for X-ray or electron beam lithog. contg. alkali-sol. resin and acidic crosslinking agent)
- IT 3089-11-0P 32449-09-5P
 (crosslinking agent; crosslinking agent for neg.-working **photoresist** compn. for X-ray or electron beam lithog.)
- IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 168634-95-5P 258341-98-9P 270563-93-4P 270563-96-7P
 279244-43-8P 349619-92-7P 349647-26-3P
 (photoacid generator; acid-generating agent in neg.-working **photoresist** compn. for X-ray or electron beam lithog.)
- IT 15625-89-5, Trimethylolpropane triacrylate 17831-71-9,
 Tetraethyleneglycol diacrylate 29570-58-9, Dipentaerythritol hexaacrylate
 (polymerizable monomer in neg.-working **photoresist** compn. for X-ray or electron beam lithog.)
- IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P
 185502-11-8P 185502-14-1P 185502-15-2P 197087-73-3P
 197087-74-4P
 (synthesis of acid crosslinking agent for neg.-working **photoresist** compn. for X-ray or electron beam lithog.)
- IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
 (synthesis of acid-generating agent for neg.-working **photoresist** compn. for X-ray or electron beam lithog.)
- IT 24979-73-5P, 3-Hydroxystyrene-styrene copolymer 24979-74-6P,
 4-Hydroxystyrene-styrene copolymer 110123-10-9P,
 4-Hydroxystyrene-2-hydroxyethyl acrylate copolymer 171429-59-7P,
 4-Hydroxystyrene-4-acetoxystyrene copolymer 185405-14-5P
349647-01-4P 349647-02-5P 349647-03-6P

349647-04-7P 349647-05-8P 349647-06-9P 349647-07-0P
 349647-08-1P 349647-10-5P 349647-12-7P 349647-14-9P
 349647-16-1P 349647-18-3P 349647-19-4P 349647-21-8P
 349647-23-0P 349652-45-5P 349652-47-7P 349652-48-8P

(synthesis of alkali-sol. resin for neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

L64 ANSWER 16 OF 34 HCPLUS COPYRIGHT 2003 ACS

2001:469374 Document No. 135:84296 Radiation-sensitive chemically amplified negative-working **resist** compositions containing vinylbenzodioxole derivatives polymers. Adekawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001174994 A2 20010629, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-358016 19991216.

AB The **resist** compns. contain (A) alk.-sol. resins involving structure units of 4-vinyl-1,3-benzodioxole derivs., compds. which generate acids by electron beam or x-ray irradn., acid-crosslinkable crosslinking agents, and optionally F- and/or silicone-based surfactants. The compns. satisfy properties of sensitivity, developability, and **resist** pattern profiles to the use of electron beam or x-ray.

IT **346694-37-9P**
 (radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)

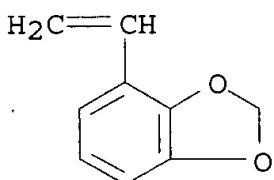
RN 346694-37-9 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole (9CI)
 (CA INDEX NAME)

CM 1

CRN 104721-74-6

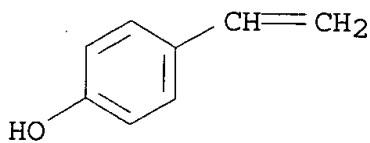
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 346694-39-1P 346694-41-5P 346694-43-7P
 346694-45-9P 346694-47-1P 346694-48-2P
 346694-50-6P 346694-51-7P 346694-53-9P
 346694-54-0P 346694-55-1P

(radiation-sensitive chem. amplified neg.-working **resist**
 compns. contg. vinylbenzodioxole derivs. polymers)

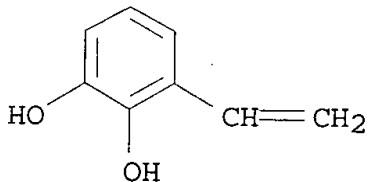
RN 346694-39-1 HCPLUS

CN 1,2-Benzenediol, 3-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole
 (9CI) (CA INDEX NAME)

CM 1

CRN 113678-91-4

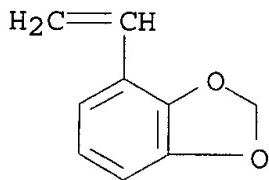
CMF C8 H8 O2



CM 2

CRN 104721-74-6

CMF C9 H8 O2

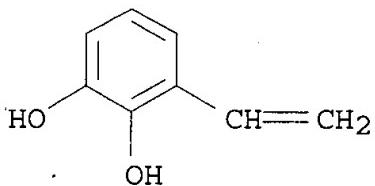


RN 346694-41-5 HCPLUS

CN 1,2-Benzenediol, 3-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole
 and 4-ethenylphenol (9CI) (CA INDEX NAME)

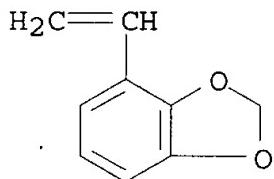
CM 1

CRN 113678-91-4
 CMF C8 H8 O2



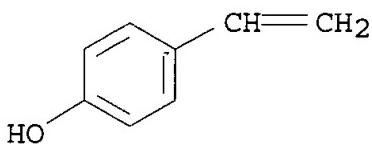
CM 2

CRN 104721-74-6
 CMF C9 H8 O2



CM 3

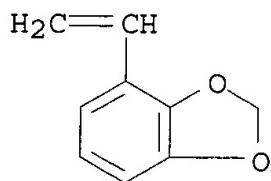
CRN 2628-17-3
 CMF C8 H8 O



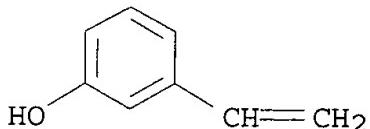
RN 346694-43-7 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole (9CI)
 (CA INDEX NAME)

CM 1

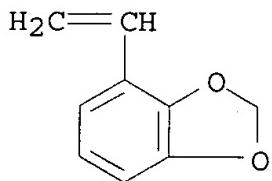
CRN 104721-74-6
 CMF C9 H8 O2



CM 2

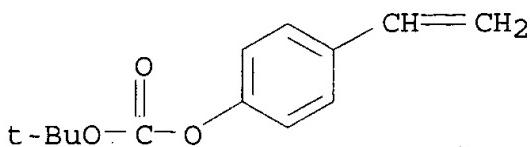
CRN 620-18-8
CMF C8 H8 ORN 346694-45-9 HCPLUS
CN Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with
4-ethenyl-1,3-benzodioxole and 4-ethenylphenol (9CI) (CA INDEX
NAME)

CM 1

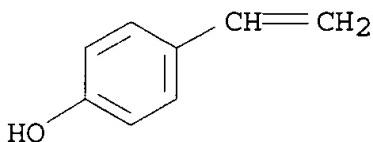
CRN 104721-74-6
CMF C9 H8 O2

CM 2

CRN 87188-51-0
CMF C13 H16 O3



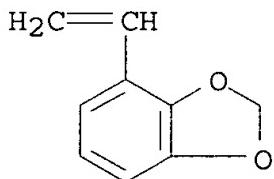
CM 3

CRN 2628-17-3
CMF C8 H8 O

RN 346694-47-1 HCAPLUS

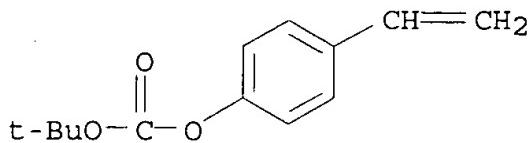
CN Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with
4-ethenyl-1,3-benzodioxole and 3-ethenylphenol (9CI) (CA INDEX
NAME)

CM 1

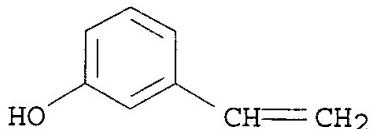
CRN 104721-74-6
CMF C9 H8 O2

CM 2

CRN 87188-51-0
CMF C13 H16 O3



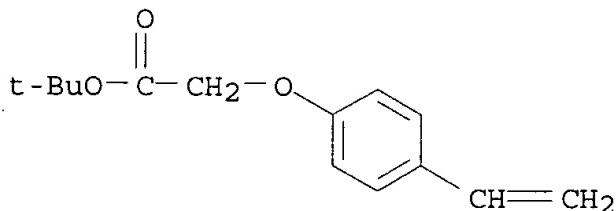
CM 3

CRN 620-18-8
CMF C8 H8 O

RN 346694-48-2 HCPLUS

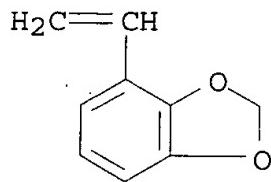
CN Acetic acid, (4-ethenylphenoxy)-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-1,3-benzodioxole and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

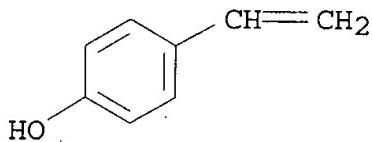
CRN 142952-61-2
CMF C14 H18 O3

CM 2

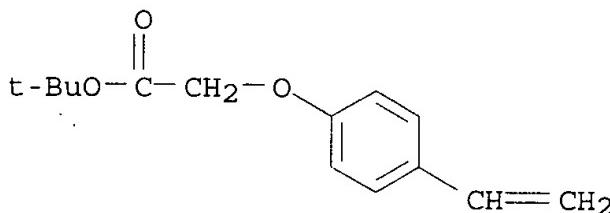
CRN 104721-74-6
CMF C9 H8 O2



CM 3

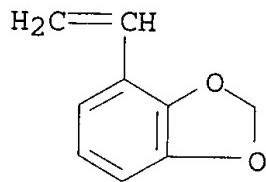
CRN 2628-17-3
CMF C8 H8 ORN 346694-50-6 HCPLUS
CN Acetic acid, (4-ethenylphenoxy)-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-1,3-benzodioxole and 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 142952-61-2
CMF C14 H18 O3

CM 2

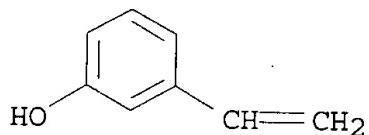
CRN 104721-74-6
CMF C9 H8 O2



CM 3

CRN 620-18-8

CMF C8 H8 O



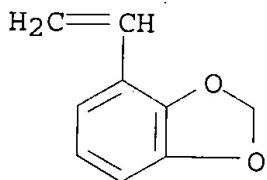
RN 346694-51-7 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole and
1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 104721-74-6

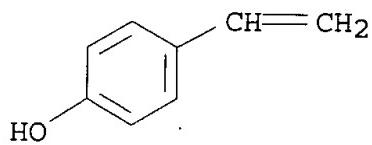
CMF C9 H8 O2



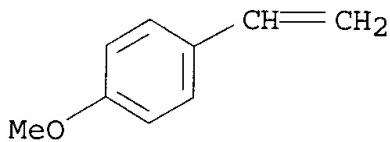
CM 2

CRN 2628-17-3

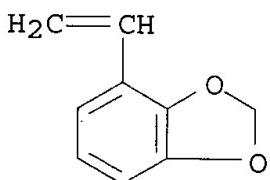
CMF C8 H8 O



CM 3

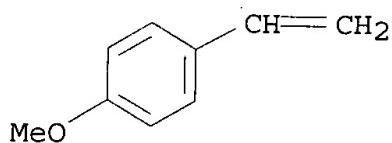
CRN 637-69-4
CMF C9 H10 ORN 346694-53-9 HCPLUS
CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole and
1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

CM 1

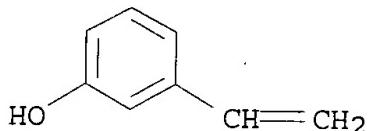
CRN 104721-74-6
CMF C9 H8 O2

CM 2

CRN 637-69-4
CMF C9 H10 O



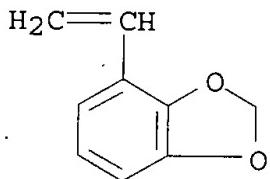
CM 3

CRN 620-18-8
CMF C₈ H₈ O

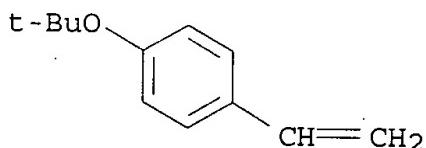
RN 346694-54-0 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

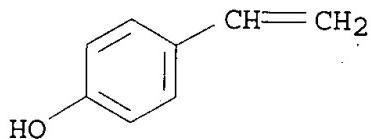
CM 1

CRN 104721-74-6
CMF C₉ H₈ O₂

CM 2

CRN 95418-58-9
CMF C₁₂ H₁₆ O

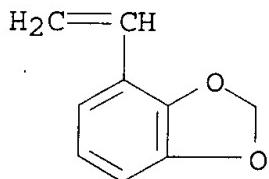
CM 3

CRN 2628-17-3
CMF C8 H8 O

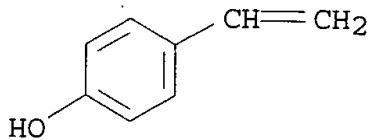
RN 346694-55-1 HCPLUS

CN Benzoic acid, 4-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole
and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

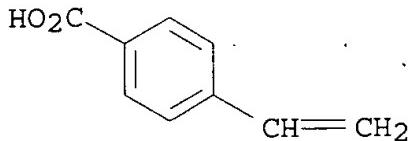
CRN 104721-74-6
CMF C9 H8 O2

CM 2

CRN 2628-17-3
CMF C8 H8 O

CM 3

CRN 1075-49-6
CMF C9 H8 O2



IC ICM G03F007-038
 ICS C08F002-54; C08K005-00; C08L025-18; G03F007-004; G03F007-033;
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation sensitive chem amplified neg **resist**;
 vinylbenzodioxole polymer alkali soly neg **resist**

IT Surfactants
 (F- and/or silicone-based; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)

IT **Resists**
 (neg.-working radiation-sensitive; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)

IT Electron beam **resists**
 (neg.-working; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)

IT X-ray **resists**
 (neg.; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)

IT Crosslinking agents
 (radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)

IT Polysiloxanes, uses
 (surfactant; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)

IT 66003-78-9 157826-08-9
 (acid generator; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)

IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 258341-98-9P
 (acid generator; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)

IT 161679-94-3P 162846-57-3P
 (crosslinking agent; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)

IT 3089-11-0 32449-09-5 161679-98-7 185502-11-8 185502-14-1
 197087-73-3 197087-74-4 346694-57-3 346694-58-4
 (crosslinking agent; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)

- IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P 270564-02-8P
 (intermediate for acid generator; radiation-sensitive chem.
 amplified neg.-working **resist** compns. contg.
 vinylbenzodioxole derivs. polymers)
- IT 346694-37-9P
 (radiation-sensitive chem. amplified neg.-working **resist**
 compns. contg. vinylbenzodioxole deriv. polymers)
- IT 346694-39-1P 346694-41-5P 346694-43-7P
 346694-45-9P 346694-47-1P 346694-48-2P
 346694-50-6P 346694-51-7P 346694-53-9P
 346694-54-0P 346694-55-1P
 (radiation-sensitive chem. amplified neg.-working **resist**
 compns. contg. vinylbenzodioxole derivs. polymers)
- IT 945-51-7, Diphenyl sulfoxide
 (reactant for acid generator; radiation-sensitive chem. amplified
 neg.-working **resist** compns. contg. vinylbenzodioxole
 derivs. polymers)
- IT 832-53-1, Pentafluorobenzenesulfonyl chloride 2049-95-8,
 tert-Amylbenzene
 (starting material for acid generator; radiation-sensitive chem.
 amplified neg.-working **resist** compns. contg.
 vinylbenzodioxole derivs. polymers)
- IT 110726-28-8, 1-[.alpha.-Methyl-.alpha.-(4-hydroxyphenyl)ethyl]-4-
 [.alpha.,.alpha.-bis(4-hydroxyphenyl)ethyl]benzene
 (starting material for crosslinking agent; radiation-sensitive
 chem. amplified neg.-working **resist** compns. contg.
 vinylbenzodioxole derivs. polymers)
- IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08
 (surfactant; radiation-sensitive chem. amplified neg.-working
resist compns. contg. vinylbenzodioxole derivs. polymers)

L64 ANSWER 17 OF 34 HCPLUS COPYRIGHT 2003 ACS

2001:451017 Document No. 135:53501 Chemical amplification type
 negative-working **resist** composition for electron beams or
 x-rays. Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Eur.
 Pat. Appl. EP 1109066 A1 20010620, 72 pp. DESIGNATED STATES: R:
 AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE,
 SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP
 2000-127268 20001218. PRIORITY: JP 1999-358022 19991216.

AB The invention relates to a neg. working **resist** compn.
 capable of forming fine patterns using X-rays and electron beams,
 used in super-lithog. process for producing VLSI and high-capacity
 microchips and semiconductor devices and other photofabrication
 processes. A neg.-working chem. amplification-type **resist**
 compn. for electron beams or x-rays satisfying the characteristics
 of the sensitivity and resoln..bul.**resist** pattern for the
 use of electron beams or x-rays is provided. The chem.
 amplification-type neg.-working **resist** compn. contains (a)
 an alkali-sol. resin having a wt.-av. mol. wt. of exceeding 3,000
 and not larger than 1,000,000, (b) a crosslinking agent causing
 crosslinkage by an acid, and (c) a compd. generating an acid by the
 irradn. of electron beams or x-rays, wherein the alkali-sol. resin

has a specific structure.

IT 345212-32-0P 345212-34-2P 345212-37-5P
 345212-38-6P 345212-40-0P 345212-43-3P
 345212-46-6P 345212-49-9P

(chem.-amplified neg.-working resist compn. for
 electron beams or x-rays contg. alkali-sol. resin of)

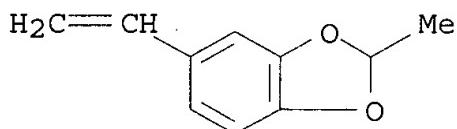
RN 345212-32-0 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-2-methyl-1,3-benzodioxole
 (9CI) (CA INDEX NAME)

CM 1

CRN 345212-31-9

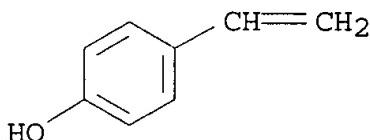
CMF C10 H10 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



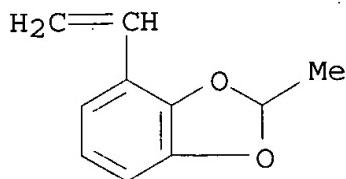
RN 345212-34-2 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 4-ethenyl-2-methyl-1,3-benzodioxole
 (9CI) (CA INDEX NAME)

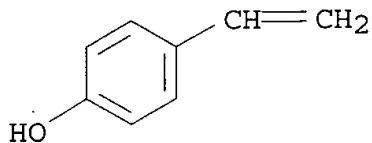
CM 1

CRN 345212-33-1

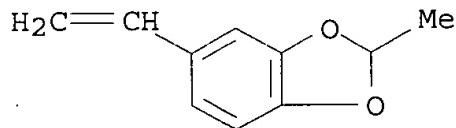
CMF C10 H10 O2



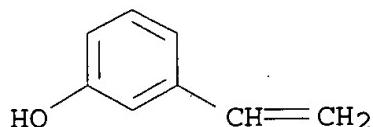
CM 2

CRN 2628-17-3
CMF C8 H8 ORN 345212-37-5 HCPLUS
CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-2-methyl-1,3-benzodioxole
(9CI) (CA INDEX NAME)

CM 1

CRN 345212-31-9
CMF C10 H10 O2

CM 2

CRN 620-18-8
CMF C8 H8 O

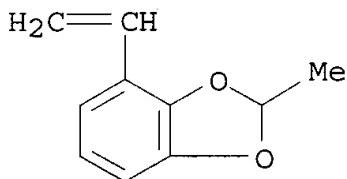
RN 345212-38-6 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-2-methyl-1,3-benzodioxole
(9CI) (CA INDEX NAME)

CM 1

CRN 345212-33-1

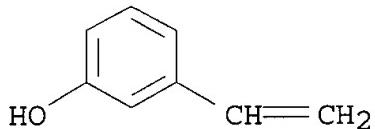
CMF C10 H10 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



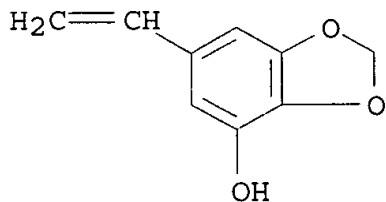
RN 345212-40-0 HCPLUS

CN 1,3-Benzodioxol-4-ol, 6-ethenyl-, polymer with 3-ethenylphenol (9CI)
(CA INDEX NAME)

CM 1

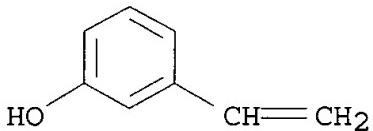
CRN 345212-39-7

CMF C9 H8 O3



CM 2

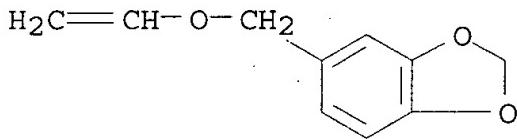
CRN 620-18-8
 CMF C8 H8 O



RN 345212-43-3 HCAPLUS
 CN Phenol, 4-ethenyl-, polymer with 5-[(ethenyloxy)methyl]-1,3-benzodioxole (9CI) (CA INDEX NAME)

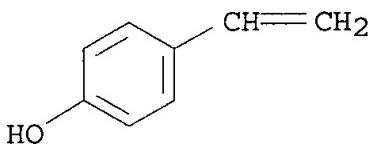
CM 1

CRN 345212-42-2
 CMF C10 H10 O3



CM 2

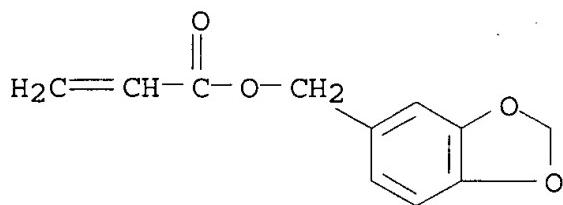
CRN 2628-17-3
 CMF C8 H8 O



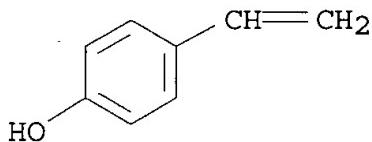
RN 345212-46-6 HCAPLUS
 CN 2-Propenoic acid, 1,3-benzodioxol-5-ylmethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

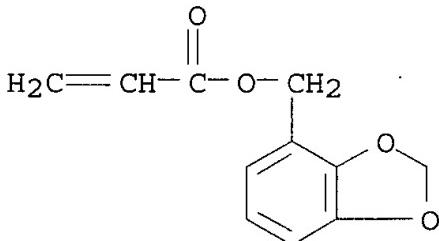
CRN 109549-34-0
 CMF C11 H10 O4



CM 2

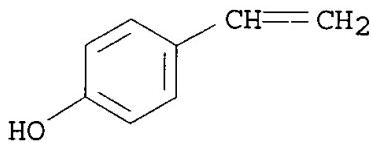
CRN 2628-17-3
CMF C8 H8 ORN 345212-49-9 HCPLUS
CN 2-Propenoic acid, 1,3-benzodioxol-4-ylmethyl ester, polymer with
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 345212-48-8
CMF C11 H10 O4

CM 2

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-038
 ICS G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST neg **resist** electron beam x ray microchip photolithog
 IT Photolithography
 (chem. amplified neg.-working **resist** compn. for electron beams or x-rays)
 IT Electron beam **resists**
 X-ray **resists**
 (chem.-amplified neg.-working **resist** compn. for electron beams or x-rays contg. alkali-sol. resin)
 IT Crosslinking agents
 (chem.-amplified neg.-working **resist** compn. for electron beams or x-rays contg. alkali-sol. resin and)
 IT Negative **photoresists**
 (chem.-amplified; chem.-amplified neg.-working **resist** compn. for electron beams or x-rays contg. alkali-sol. resin)
 IT 345212-99-9P
 (chem.-amplified neg.-working **resist** compn. for electron beams or x-rays contg. alkali-sol. resin of)
 IT 321164-59-4P 345212-25-1P 345212-26-2P 345212-27-3P
 345212-28-4P 345212-29-5P 345212-30-8P 345212-32-0P
 345212-34-2P 345212-36-4P 345212-37-5P
 345212-38-6P 345212-40-0P 345212-41-1P
 345212-43-3P 345212-45-5P 345212-46-6P
 345212-47-7P 345212-49-9P 345212-51-3P 345212-53-5P
 345212-54-6P 345212-55-7P 345212-56-8P 345212-57-9P
 345212-59-1P 345212-60-4P 345212-61-5P 345212-63-7P
 345212-64-8P 345212-67-1P 345212-69-3P 345212-71-7P
 345212-73-9P 345212-74-0P 345212-75-1P 345212-77-3P
 345212-78-4P 345212-80-8P 345212-82-0P 345212-84-2P
 345212-85-3P 345212-86-4P 345212-87-5P 345212-89-7P
 345212-91-1P 345212-92-2P 345212-93-3P 345212-95-5P
 345212-97-7P
 (chem.-amplified neg.-working **resist** compn. for electron beams or x-rays contg. alkali-sol. resin of)
 IT 3089-11-0P 161679-94-3P 162846-57-3P 244057-73-6P
 (chem.-amplified neg.-working **resist** compn. for electron beams or x-rays contg. crosslinking agent)
 IT 17464-88-9 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate 157826-08-9 270564-02-8,
 Tetramethylammonium pentafluorobenzenesulfonate
 (synthesis of, as photoacid generator in chem. amplified

neg.-working **resist** compn. for electron beams or
x-rays)

- L64 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 2001:388943 Document No. 135:12117 Photosensitive resin composition containing modified **vinyl alcohol polymer**. Fujiwara, Naoki (Kuraray Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001147528 A2 20010529, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-327791 19991118.
- AB The compn. comprises a modified **vinyl alc. polymer** having repeating unit CH₂CROAc (A) and CH₂CROH (B) (R = C₁-3 alkyl), polymn. degree 100-5000, and sapon. degree 50-99.95 mol% and a photosensitizer. The compn. has good water developability and is esp. suitable for manuf. of black matrix, phosphor pattern, color filter, etc.
- IC ICM G03F007-033
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST photosensitive compn modified **vinyl alc polymer** black matrix; phosphor pattern **photoresist**
modified **vinyl alc polymer**; color
filter **photoresist** modified **vinyl alc polymer**
- IT Polyvinyl acetals
(acetals with styrylpyridinium and styrylquinolinium compds.; photosensitive resin compn. contg. modified **vinyl alc. polymer** for developability)
- IT Cathode ray tubes
Optical filters
Photoresists
(photosensitive resin compn. contg. modified **vinyl alc. polymer** for developability)
- IT 25822-12-2D, Isopropenyl acetate-vinyl acetate copolymer, sapond.
342018-22-8D, sapond. 342018-24-0D, sapond.
(photosensitive resin compn. contg. modified **vinyl alc. polymer** for developability)
- IT 7789-09-5, Ammonium dichromate 29989-17-1, Diphenylamine-4-diazonium chloride-**formaldehyde** copolymer
(photosensitizer; photosensitive resin compn. contg. modified **vinyl alc. polymer** for developability)

- L64 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 2001:377048 Document No. 135:12098 Electron beam- or x-ray-sensitive chemically amplified negative-working **resist** composition containing specific resin. Uenishi, Kazuya; Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001142200 A2 20010525, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-327090 19991117.

- AB The title compn. contains an resin solubilized in an alkali, a radiation-sensitive acid generator, and a acid-sensitive

crosslinking agent, wherein the resin contains a repeating unit derives from vinyl-1,3-benzodioxole. The compn., which contains the resin having 1,3-benzodioxole groups, provides the high sensitivity, the high resoln., and the good pattern profiles for the exposure of electron beam or x-ray.

IT 185405-14-5DP, reaction product with 1-cyclohexylethyl vinyl ether 185405-14-5P, 5-Vinyl-1,3-benzodioxole-4-hydroxystyrene copolymer 340820-42-0P

(resin for neg.-working resist compn.)

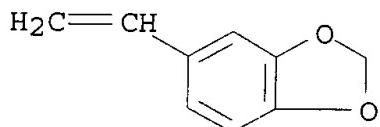
RN 185405-14-5 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

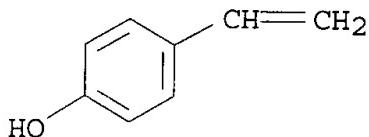
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



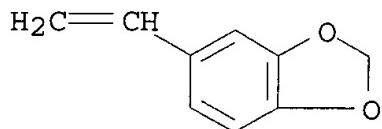
RN 185405-14-5 HCPLUS

CN Phenol, 4-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

CRN 7315-32-4

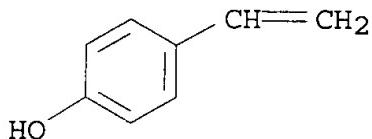
CMF C9 H8 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



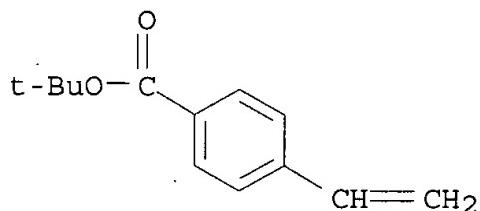
RN 340820-42-0 HCAPLUS

CN Benzoic acid, 4-ethenyl-, 1,1-dimethylethyl ester, polymer with
4-ethenyl-1,2-benzenediol and 5-ethenyl-1,3-benzodioxole (9CI). (CA
INDEX NAME)

CM 1

CRN 84740-98-7

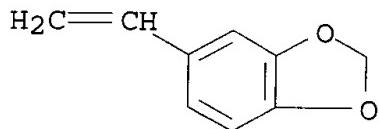
CMF C13 H16 O2



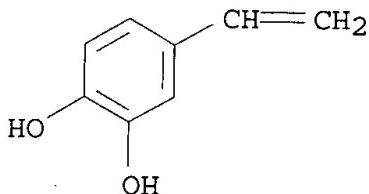
CM 2

CRN 7315-32-4

CMF C9 H8 O2



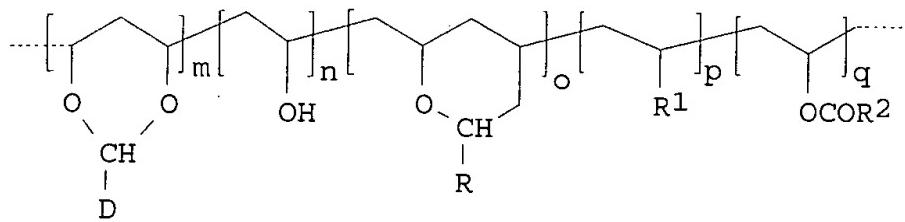
CM 3

CRN 6053-02-7
CMF C8 H8 O2

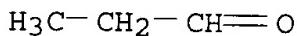
IC ICM G03F007-004
 ICS G03F007-004; C08F212-14; C08F220-12; C08J003-24; C08K005-00;
 C08K005-13; C08L025-18; C08L033-04; G03F007-038; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 35
 ST electron beam x ray amplified neg **resist** compn resin
 IT Photolithography
Photoresists
 (electron beam- or x-ray-sensitive neg.-working **resist**
 compn.)
 IT 185405-14-5DP, reaction product with 1-cyclohexylethyl vinyl
 ether 185405-14-5P, 5-Vinyl-1,3-benzodioxole-4-
 hydroxystyrene copolymer 340820-42-0P 340820-43-1P
 (resin for neg.-working **resist** compn.)

L64 ANSWER 20 OF 34 HCPLUS COPYRIGHT 2003 ACS
 2000:54078 Document No. 132:100460 Composition for bottom reflection
 preventive film and novel polymeric dye for use in the same.
 Pawlowski, Georg; Padmanaban, Munirathna; Kang, Wen-Bing; Tanaka,
 Hatsuyuki; Kimura, Ken; Nishiwaki, Yoshinori (Clariant International
 Ltd., Switz.). PCT Int. Appl. WO 2000003303 A1 20000120, 45 pp.
 DESIGNATED STATES: W: CN, JP, KR, US; RW: BE, DE, FR, GB, IT, NL.
 (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP3333 19990623.
 PRIORITY: JP 1998-195174 19980710.

GI



- AB A material for forming a bottom reflection preventive film in photolithog., which contains a polymeric dye having repeating units having cyclic **acetal** groups and represented by formula I (R = H, alkyl, cycloalkyl, aryl; R1 = alkyl, aryl, -COOR3 (R3 represents alkyl); R2 = alkyl, cycloalkyl, aryl; D = org. chromophore (absorbing exposure light at wavelengths of 150 to 450 nm), aryl, fused aryl, heteroaryl; m, o >0; n, p, q .gt;req.0). The compn. has film-forming properties and gives a bottom reflection preventive film which shows absorption at the wavelength of exposure light, is satisfactory in step coverage and non-intermixing with a photoresist layer, and has a high etching rate.
- IT 123-38-6DP, Propionaldehyde, reaction products with ethylene-vinyl alc. copolymer
(compn. for bottom reflection preventive film and novel polymeric dye for use in the same)
- RN 123-38-6 HCPLUS
- CN Propanal (9CI) (CA INDEX NAME)



- IC ICM G03F007-11
ICS G03F007-004; H01L021-027; C08F016-38; C08F008-28; C08L029-14
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41, 42, 73, 76
- ST compn bottom reflection prevention film polymeric dye photolithog;
cyclic **acetal** bottom antireflective coating
- IT Polyvinyl **acetals**
(compn. for bottom reflection preventive film and novel polymeric dye for use in the same)
- IT Polyvinyl **acetals**
(propionals; compn. for bottom reflection preventive film and novel polymeric dye for use in the same)
- IT 123-08-0DP, 4-Hydroxybenzaldehyde, cyclic **acetals** with poly(vinyl alc.) 123-38-6DP,
Propionaldehyde, reaction products with ethylene-vinyl alc.
copolymer 642-31-9DP, 9-Anthrinaldehyde, cyclic **acetals**
with poly(vinyl alc.) 25067-34-9DP,
Ethylene-vinyl alcohol copolymer, reaction products with aldehydes

(compn. for bottom reflection preventive film and novel polymeric dye for use in the same)

L64 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 1997:217746 Document No. 126:205487 Positive-working
photoresist composition using specific alkali-soluble novolak resin. Tan, Shiro; Kawabe, Yasumasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 09015851 A2 19970117 Heisei, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-167529 19950703.

AB The compn., contg. a 1,2-quinonediazide deriv., includes an alkali-sol. resin prep'd. by condensation of a phenol deriv., HCHO, and an alkylenedioxy-substituted benzaldehyde deriv. The compn. shows broad defocus latitude and curability at deep-UV exposure.

IT 187936-95-4P 187936-97-6P 187936-99-8P
 187937-01-5P 187937-03-7P 187937-05-9P
 187937-07-1P 187937-10-6P

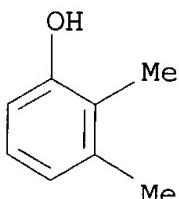
(pos.-working **photoresist** contg. alkali-sol. novolaks)

RN 187936-95-4 HCAPLUS

CN 1,3-Benzodioxole-5-carboxaldehyde, polymer with 2,3-dimethylphenol, 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

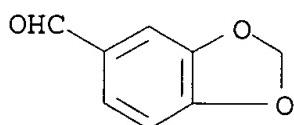
CM 1

CRN 526-75-0
 CMF C8 H10 O



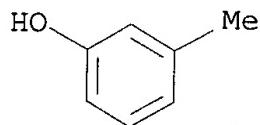
CM 2

CRN 120-57-0
 CMF C8 H6 O3



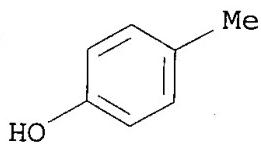
CM 3

CRN 108-39-4
CMF C7 H8 O



CM 4

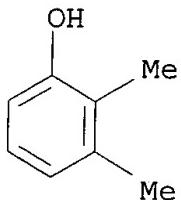
CRN 106-44-5
CMF C7 H8 O



RN 187936-97-6 HCAPLUS
CN 1,3-Benzodioxole-5-carboxaldehyde, polymer with 2,3-dimethylphenol and 3-methylphenol (9CI) (CA INDEX NAME)

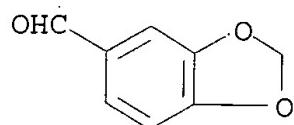
CM 1

CRN 526-75-0
CMF C8 H10 O



CM 2

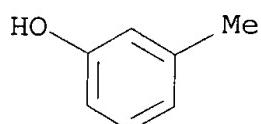
CRN 120-57-0
CMF C8 H6 O3



CM 3

CRN 108-39-4

CMF C7 H8 O



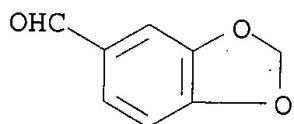
RN 187936-99-8 HCPLUS

CN 1,3-Benzodioxole-5-carboxaldehyde, polymer with 3,5-dimethylphenol,
3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 120-57-0

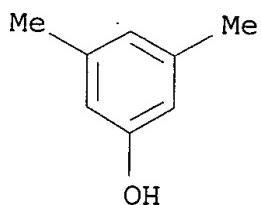
CMF C8 H6 O3



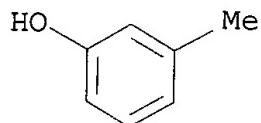
CM 2

CRN 108-68-9

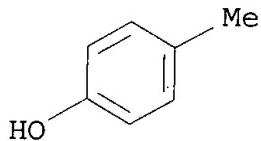
CMF C8 H10 O



CM 3

CRN 108-39-4
CMF C7 H8 O

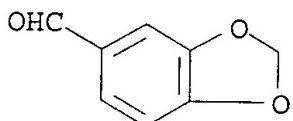
CM 4

CRN 106-44-5
CMF C7 H8 O

RN 187937-01-5 HCPLUS

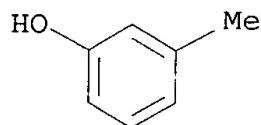
CN 1,3-Benzodioxole-5-carboxaldehyde, polymer with 3-methylphenol and
4-methylphenol (9CI) (CA INDEX NAME)

CM 1

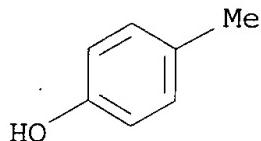
CRN 120-57-0
CMF C8 H6 O3

CM 2

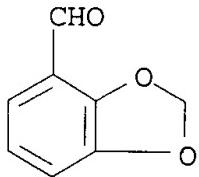
CRN 108-39-4
CMF C7 H8 O



CM 3

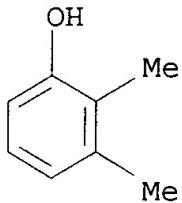
CRN 106-44-5
CMF C7 H8 ORN 187937-03-7 HCPLUS
CN 1,3-Benzodioxole-4-carboxaldehyde, polymer with 2,3-dimethylphenol,
3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

CM 1

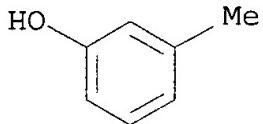
CRN 7797-83-3
CMF C8 H6 O3

CM 2

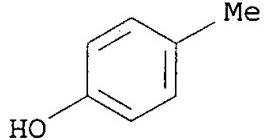
CRN 526-75-0
CMF C8 H10 O



CM 3

CRN 108-39-4
CMF C7 H8 O

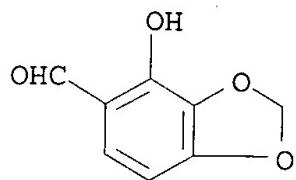
CM 4

CRN 106-44-5
CMF C7 H8 O

RN 187937-05-9 HCAPLUS
CN 1,3-Benzodioxole-5-carboxaldehyde, 4-hydroxy-, polymer with
2,3-dimethylphenol, 3-methylphenol and 4-methylphenol (9CI) (CA
INDEX NAME)

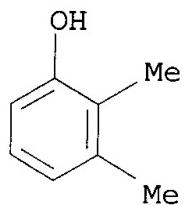
CM 1

CRN 23780-59-8
CMF C8 H6 O4



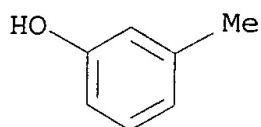
CM 2

CRN 526-75-0
CMF C8 H10 O



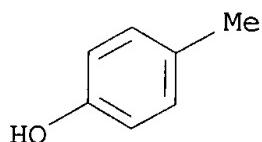
CM 3

CRN 108-39-4
CMF C7 H8 O



CM 4

CRN 106-44-5
CMF C7 H8 O



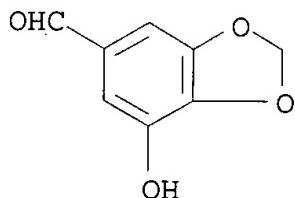
RN 187937-07-1 HCAPLUS

CN 1,3-Benzodioxole-5-carboxaldehyde, 7-hydroxy-, polymer with
2,3-dimethylphenol, 3-methylphenol and 4-methylphenol (9CI) (CA
INDEX NAME)

CM 1

CRN 81805-98-3

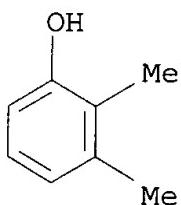
CMF C8 H6 O4



CM 2

CRN 526-75-0

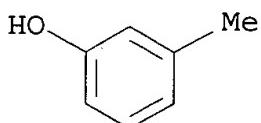
CMF C8 H10 O



CM 3

CRN 108-39-4

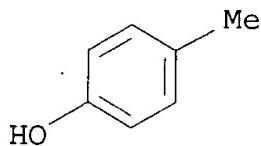
CMF C7 H8 O



CM 4

CRN 106-44-5

CMF C7 H8 O



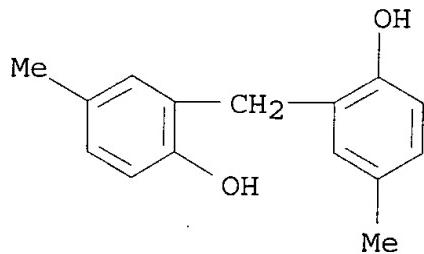
RN 187937-10-6 HCAPLUS

CN 1,3-Benzodioxole-5-carboxaldehyde, polymer with 2,6-dimethylphenol, formaldehyde, 2,2'-methylenebis[4-methylphenol], 2-methylphenol and 2,3,5-trimethylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 3236-63-3

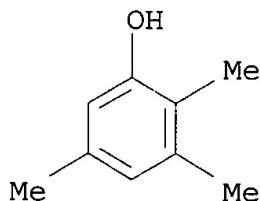
CMF C15 H16 O2



CM 2

CRN 697-82-5

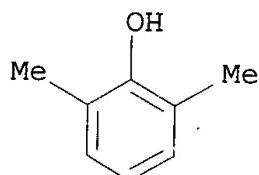
CMF C9 H12 O



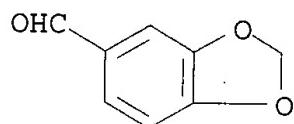
CM 3

CRN 576-26-1

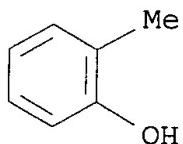
CMF C8 H10 O



CM 4

CRN 120-57-0
CMF C8 H6 O3

CM 5

CRN 95-48-7
CMF C7 H8 O

CM 6

CRN 50-00-0
CMF C H2 O $\text{H}_2\text{C}=\text{O}$

IC ICM G03F007-022
 ICS C08L061-06; G03F007-023; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 37

ST pos photoresist alk sol novolak; novolak resin
photoresist defocus latitude; quinonediazide deriv
photoresist alk sol novolak

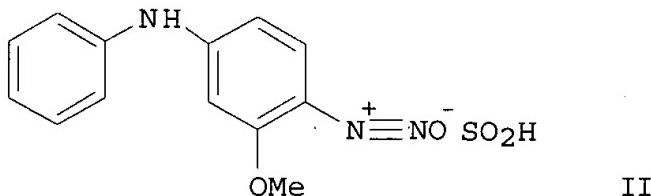
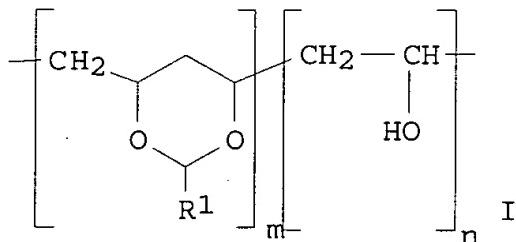
IT Phenolic resins, preparation
(novolak, alk. sol.; pos.-working photoresist contg.
alkali-sol. novolaks)

IT Positive photoresists
(pos.-working photoresist contg. alkali-sol. novolaks)

IT 187936-95-4P 187936-97-6P 187936-99-8P
187937-01-5P 187937-03-7P 187937-05-9P
187937-07-1P 187937-10-6P
(pos.-working photoresist contg. alkali-sol. novolaks)

L64 ANSWER 22 OF 34 HCPLUS COPYRIGHT 2003 ACS
1997:174516 Document No. 126:179058 Photosensitive composition
containing acid, vinyl alcohol polymer
, and photoacid-generator for photoresist. Shinoda,
Naomi; Gokochi, Tooru (Tokyo Shibaura Electric Co, Japan). Jpn.
Kokai Tokkyo Koho JP 08328242 A2 19961213 Heisei, 16 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-136774 19950602.

GI



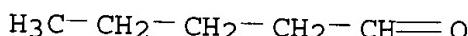
AB The title compn. comprises (A) a metal ion- and/or a basic
compd.-contg. compd., which changes its solv. after acid
crosslinking or decompr., (B) a photoacid-generating agent, and (C)
an acid. The acid-labile compd. may be water-sol. and has a
repeating unit I ($R_1 = H$, monovalent org. group; $m, n = \text{integer}$) or
 $[\text{CH}_2\text{CH}(\text{OH})]^n$. The compn. shows high photosensitivity even if it is
contaminated with metal ions and basic compds. Thus, H_2SO_4 and II
were added to an aq. poly(vinyl butyral) soln. (Na^+ 2500 ppm) to
give a resist soln.

IT 110-62-3D, Valeraldehyde, cyclic acetals with

poly(vinyl alc.) 123-38-6D,
Propionaldehyde, cyclic acetals with poly(
vinyl alc.)
 (photosensitive compn. contg. acid, **vinyl alc**
. polymer, and photoacid-generator for
photoresist)

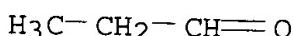
RN 110-62-3 HCAPLUS

CN Pentanal (9CI) (CA INDEX NAME)



RN 123-38-6 HCAPLUS

CN Propanal (9CI) (CA INDEX NAME)



IC ICM G03F007-004
 ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST **photoresist acid polyvinyl alc.**
 photoacid generator; **acetal** polyvinyl metal basic compd
photoresist
 IT Polyvinyl acetals
 (formals; photosensitive compn. contg. acid, **vinyl**
alc. polymer, and photoacid-generator for
photoresist)
 IT Photoresists
 (photosensitive compn. contg. acid, **vinyl alc**
. polymer, and photoacid-generator for
photoresist)
 IT Polyvinyl acetals
 Polyvinyl butyrals
 (photosensitive compn. contg. acid, **vinyl alc**
. polymer, and photoacid-generator for
photoresist)
 IT Acids, uses
 (photosensitive compn. contg. acid, **vinyl alc**
. polymer, and photoacid-generator for
photoresist)
 IT Bases, uses
 Metals, uses
 (**vinyl alc. polymer** contg.;
 photosensitive compn. contg. acid, **vinyl alc.**
polymer, and photoacid-generator for **photoresist**)
 IT 137867-61-9, NAT 105 167095-81-0 173162-27-1 180574-69-0
 186966-39-2

- (photoacid-generator; photosensitive compn. contg. acid,
vinyl alc. polymer, and
 photoacid-generator for **photoresist**)
- IT 56-82-6DP, Glyceraldehyde, cyclic **acetals** with
poly(vinyl alc.) 598-35-6DP,
 Lactaldehyde, cyclic **acetals** with **poly(vinyl alc.)** 4170-30-3DP, Crotonaldehyde, cyclic
acetals with **poly(vinyl alc.)**
 186966-40-5P, tert-Butyl methacrylate-menthyl methacrylate copolymer
 (photosensitive compn. contg. acid, **vinyl alc. polymer**, and photoacid-generator for
photoresist)
- IT 66-25-1D, Hexanal, cyclic **acetals** with **poly(vinyl alc.)** 75-87-6D, Chloral, cyclic
acetals with **poly(vinyl alc.)**
 76-36-8D, Butylchloral, cyclic **acetals** with **poly(vinyl alc.)** 78-84-2D, Isobutyraldehyde,
 cyclic **acetals** with **poly(vinyl alc.)** 78-85-3D, Methacrolein, cyclic **acetals**
 with **poly(vinyl alc.)** 79-02-7D,
 Dichloroacetaldehyde, cyclic **acetals** with **poly(vinyl alc.)** 100-52-7D, Benzaldehyde, cyclic
acetals with **poly(vinyl alc.)**,
 uses 104-55-2D, cyclic **acetals** with **poly(vinyl alc.)** 107-02-8D, Acrylaldehyde, cyclic
acetals with **poly(vinyl alc.)**
 107-20-0D, Chloroacetaldehyde, cyclic **acetals** with
poly(vinyl alc.) 110-62-3D,
 Valeraldehyde, cyclic **acetals** with **poly(vinyl alc.)** 111-71-7D, Heptanal, cyclic
acetals with **poly(vinyl alc.)**
 112-31-2D, Decanal, cyclic **acetals** with **poly(vinyl alc.)** 115-17-3D, Bromal, cyclic
acetals with **poly(vinyl alc.)**
 123-38-6D, Propionaldehyde, cyclic **acetals** with
poly(vinyl alc.) 124-13-0D, Octanal,
 cyclic **acetals** with **poly(vinyl alc.)** 124-19-6D, Nonanal, cyclic **acetals** with
poly(vinyl alc.) 141-46-8D,
 Glycolaldehyde, cyclic **acetals** with **poly(vinyl alc.)** 298-12-4D, cyclic **acetals**
 with **poly(vinyl alc.)** 590-86-3D,
 Isovaleraldehyde, cyclic **acetals** with **poly(vinyl alc.)** 1115-11-3D, 2-Methyl-2-butenal,
 cyclic **acetals** with **poly(vinyl alc.)** 7637-07-2, Boron trifluoride, uses 7647-01-0,
 Hydrochloric acid, uses 7664-38-2, Phosphoric acid, uses
 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses
 28777-87-9D, Hydroxybenzaldehyde, cyclic **acetals** with
poly(vinyl alc.) 30678-61-6D,
 Naphthaldehyde, cyclic **acetals** with **poly(vinyl alc.)**

(photosensitive compn. contg. acid, **vinyl alc.**
polymer, and photoacid-generator for
photoresist)

IT 7440-23-5, Sodium, uses
 (vinyl alc. polymer contg.;
 photosensitive compn. contg. acid, **vinyl alc.**
polymer, and photoacid-generator for **photoresist**
)

L64 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2003 ACS

1995:212377 Document No. 122:147327 Liquid **resist** ink

compositions containing glycerol (meth)acrylate-based polymers and printed circuit boards. Hashimoto, Soichi; Nishimura, Toshiaki (Goo Kagaku Kogyo Kk, Japan). Jpn. Kokai Tokkyo Koho JP 06208224 A2 19940726 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-32378 19930108.

AB Claimed are the ink compns. comprising (A) a polymer of 5-100 wt.% glycerol (meth)acrylate and 0-95 wt.% ethylenic monomer, (B) a photoinitiator, (C) a diluent, and (D) a thermosetting epoxy compd. and are developable with H₂O or a dil. alkali soln. The ink compns. contg. a polymer prep'd. by treatment of the above polymer (A) with ethylenic monomer having epoxy group instead of the polymer (A) are also claimed. Printed circuit boards manufd. using the ink compns. are also claimed. The ink compns. show high resoln., solvent resistance, and plating resistance, and are safe in the handling because that not much org. solvents are needed in the manuf.

IT 160954-88-1P 160954-90-5P
 (water- or alkali-developable **resist** ink compns. contg.
 glycerol (meth)acrylate-base polymer, photoinitiator, diluent,
 and thermosetting epoxy compd.)

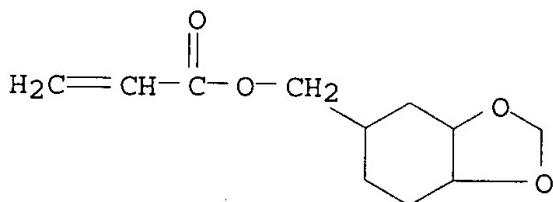
RN 160954-88-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl-ester, polymer with (hexahydro-1,3-benzodioxol-5-yl)methyl 2-propenoate, 1,2,3-propanetriol mono-2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

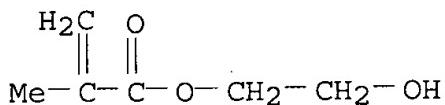
CM 1

CRN 160954-87-0

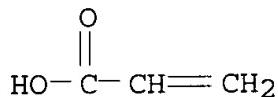
CMF C11 H16 O4



CM 2

CRN 868-77-9
CMF C6 H10 O3

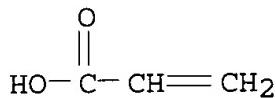
CM 3

CRN 79-10-7
CMF C3 H4 O2

CM 4

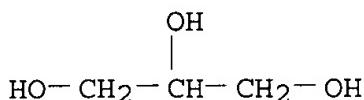
CRN 52357-34-3
CMF C6 H10 O4
CCI IDS

CM 5

CRN 79-10-7
CMF C3 H4 O2

CM 6

CRN 56-81-5
CMF C3 H8 O3



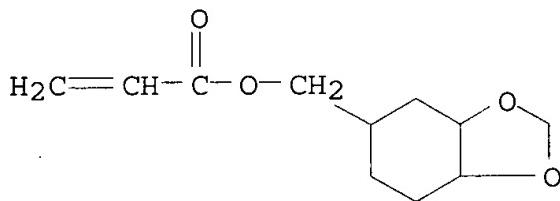
RN 160954-90-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with
(hexahydro-1,3-benzodioxol-5-yl)methyl 2-propenoate,
1,2,3-propanetriol mono(2-methyl-2-propenoate) and 2-propenoic acid
(9CI) (CA INDEX NAME)

CM 1

CRN 160954-87-0

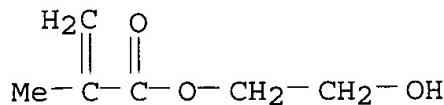
CMF C11 H16 O4



CM 2

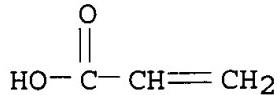
CRN 868-77-9

CMF C6 H10 O3



CM 3

CRN 79-10-7
CMF C3 H4 O2



CM 4

CRN 50853-28-6

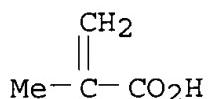
CMF C7 H12 O4

CCI IDS

CM 5

CRN 79-41-4

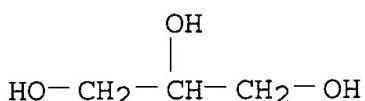
CMF C4 H6 O2



CM 6

CRN 56-81-5

CMF C3 H8 O3

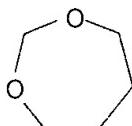


- IC ICM G03F007-027
 ICS G03F007-027; C08G059-40; C09D011-00; G03F007-028; H05K003-00
- ICA C08F299-00
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- Section cross-reference(s): 76
- ST glycerol acrylate polymer **resist** ink
- IT **Resists**
 (photo-, inks; water- or alkali-developable **resist** ink
 compns. contg. glycerol (meth)acrylate-base polymer,
 photoinitiator, diluent, and thermosetting epoxy compd.)
- IT Electric circuits
 (printed, boards, water- or alkali-developable **resist**
 ink compns. contg. glycerol (meth)acrylate-base polymer,
 photoinitiator, diluent, and thermosetting epoxy compd.)
- IT 29570-58-9, Dipentaerythritol hexaacrylate
 (diluent; water- or alkali-developable **resist** ink
 compns. contg. glycerol (meth)acrylate-base polymer,
 photoinitiator, diluent, and thermosetting epoxy compd.)
- IT 28825-96-9, TEPIC
 (thermosetting resin; water- or alkali-developable **resist**
 ink compns. contg. glycerol (meth)acrylate-base polymer,

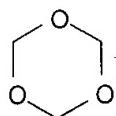
- IT photoinitiator, diluent, and thermosetting epoxy compd.)
 9019-67-4P 52357-35-4P 101963-22-8P 160954-86-9P
160954-88-1P 160954-89-2P **160954-90-5P**
 161026-58-0P
 (water- or alkali-developable **resist** ink compns. contg.
 glycerol (meth)acrylate-base polymer, photoinitiator, diluent,
 and thermosetting epoxy compd.)
- IT 5495-84-1, Quantacure ITX 71868-10-5, Irgacure 907
 (water- or alkali-developable **resist** ink compns. contg.
 glycerol (meth)acrylate-base polymer, photoinitiator, diluent,
 and thermosetting epoxy compd.)

- L64 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 1994:712002 Document No. 121:312002 Methods for selective dissolution
 of irradiated homo- or copolyoxymethylenes. Wuensch, Thomas;
 Hoffmann, Gerhard; Hoessel, Peter; Langen, Juergen; Reinecke, Holger
 (BASF A.-G., Germany). Ger. Offen. DE 4227868 A1 19940224, 6 pp.
 (German). CODEN: GWXXBX. APPLICATION: DE 1992-4227868 19920822.
- AB The title methods, which may be used for the prodn. of
 microstructures with large aspect ratios, entail the use of a
 developer comprising a phenol deriv. with free phenolic hydroxyl
 groups and .gtoreq.1 addnl. substituent on the phenol core.
- IT **25214-85-1**, Ultraform S 2320
 (developer for **resist** material from)
- RN 25214-85-1 HCAPLUS
- CN 1,3-Dioxepane, polymer with 1,3,5-trioxane (9CI) (CA INDEX NAME)

CM 1

CRN 505-65-7
CMF C5 H10 O2

CM 2

CRN 110-88-3
CMF C3 H6 O3

IC ICM G03F007-32
 ICS C08L059-00; C08J003-11; C08K005-13
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST electron beam **resist** developer phenol deriv
 IT **Resists**
 (electron-beam, phenol deriv. as developer for)
 IT 11098-12-7, Delrin 500NC10 25214-85-1, Ultraform S 2320
 61036-27-9, Hostaform C 9021 64083-86-9, Hostaform C 13021
 111417-22-2, Hostaform C 13031 159250-89-2, Ultraform E 3320X
 159251-01-1, Ultraform H 2322X
 (developer for **resist** material from)
 IT 95-48-7, o-Cresol, uses 95-87-4, 2,5-Dimethyl phenol 99-07-0,
 3-Dimethylamino phenol 104-40-5, p-Nonyl phenol 104-43-8,
 p-Dodecyl phenol 105-67-9, 2,4-Dimethyl phenol 106-48-9,
 p-Chlorophenol 527-60-6, 2,4,6-Trimethyl phenol 576-26-1,
 2,6-Dimethyl phenol 2416-94-6, 2,3,6-Trimethyl phenol
 (electron beam **resist** developer)

L64 ANSWER 25 OF 34 HCPLUS COPYRIGHT 2003 ACS
 1994:148977 Document No. 120:148977 Sesamol/aldehyde condensation products as sensitivity enhancers for radiation sensitive mixtures. Toukhy, Medhat A. (OCG Microelectronic Materials, Inc., USA). U.S. US 5275911 A 19940104, 8 pp. (English). CODEN: USXXAM.
 APPLICATION: US 1993-11565 19930201.

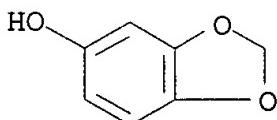
AB A radiation-sensitive compn. comprising an admixt. in a solvent of: .gtoreq.1 alkali-sol. binder resin, .gtoreq.1 photoactive compd. and an effective sensitivity enhancing amt. of .gtoreq.1 dimeric or trimeric unit formed by the condensation reaction of an aldehyde with sesamol; the amt. of the binder resin being .apprx.60 to 95% by wt. and the amt. of the photoactive component being .apprx.5% to 40% by wt., based on the total solids content of the radiation-sensitive compn.

IT 153286-07-8
 (oligomeric, **photoresists** contg. sensitivity enhancer from)

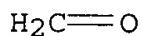
RN 153286-07-8 HCPLUS
 CN Formaldehyde, polymer with 1,3-benzodioxol-5-ol (9CI) (CA INDEX NAME)

CM 1

CRN 533-31-3
 CMF C7 H6 O3



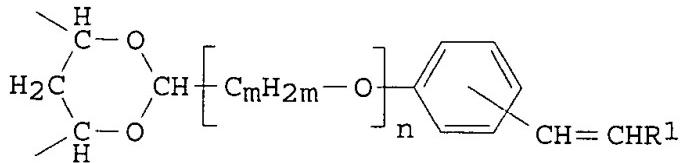
CM 2

CRN 50-00-0
CMF C H₂ O

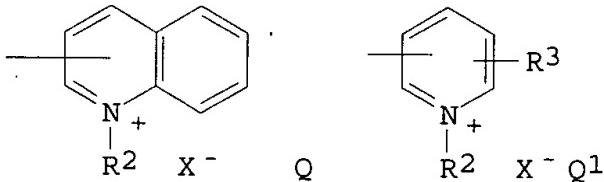
IC ICM G03F007-023
 ICS G03F007-09; G03C001-61
 NCL 430191000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT **Resists**
 (photo-, sensitivity enhancer for, sesamol-aldehyde condensation product as)
 IT 153286-07-8
 (oligomeric, **photoresists** contg. sensitivity enhancer from)

L64 ANSWER 26 OF 34 HCPLUS COPYRIGHT 2003 ACS
 1992:117272 Document No. 116:117272 Grafted polyurethanes for photocurable lithographic compositions and coatings with improved developability and water resistance. Mueller-Hess, Waltraud; Mohr, Dieter; Kroggel, Matthias (Hoechst A.-G., Germany). Eur. Pat. Appl. EP 415302 A2 19910306, 24 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (German). CODEN: EPXXDW. APPLICATION: EP 1990-116336 19900827. PRIORITY: DE 1989-3928825 19890831.

GI



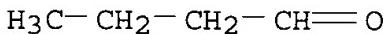
I



AB The title compns. and coatings useful for lithog. plates and **photoresists** contain 1) 20-90 wt.% of a polyurethane

resin grafted by vinyl alc. side chains
 carrying quaternary ammonium groups [I; R₁ = styrylpyridinium residue Q, naphthylpyridinium residue Q₁; R₂ = H, alkenyl, (ar)alkyl; R₃ = H, alkyl; X⁻ = anion; m = 1-6; n = 0, 1] with optional end-chain polymerizable and crosslinkable double bonds, 2) 0-80 wt.% of a low mol. wt. ethylenically unsatd. and radically polymerizable compd., 3) an optional photosensitive diazonium condensation product, and 4) 0.05-20 wt.% of a photopolymer initiator or sensitizer. Thus, a polyurethane (prepd. from isophorone diisocyanate and a polyethylene glycol/1,4-butanediol mixt.) was heated at <100.degree. with vinyl acetate in MeOH in the presence of dibenzoyl peroxide, and grafted product saponified by NaOH, the product dissolved in H₂O and acetalized with N-methyl-4-(p-formylstyryl)pyridinium methosulfate, 2,6-di-tert-butyl-4-methylphenol, Na octyl sulfate, and HCl. The mixt. was cooled to room temp., treated with butyraldehyde and aq. HCl, and the heated to give a polymer contg. 2.4 mol.% styrylpyridinium groups. A photocurable coating soln. was prepd. contg. the latter polymer, Crystal violet, and propylene glycol mono-Me ether, and applied (1.65 g/m² dry) on a roughened and anodized Al foil, which was then irradiated through a 13-step wedge and developed cleanly in 10s to give a copy with the 8th step completely formed and with clearly distinguishable fine line patterns.

IT 123-72-8DP, Butyl aldehyde, cyclic acetals with hydrolyzed vinyl acetate-grafted polyurethanes
 (prepn. of, for photocurable lithog. compns. and coatings)
 RN 123-72-8 HCPLUS
 CN Butanal (9CI) (CA INDEX NAME)



IC ICM C08F283-00
 ICS C08F299-06; C09D151-08
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35
 ST polyurethane graft photocuring lithog **photoresist**, developability enhancement lithog graft polyurethane; **photoresist** compn polyurethane developability enhancement; lithog plate coating developability enhancement
 IT **Resists**
 (photo-, photocurable compns. for prepn. of, with improved developability and water resistance)
 IT 41137-60-4DP, cyclic acetals with hydrolyzed vinyl acetate-grafted polyurethanes
 (prepn. of, for photocurable compns. and coatings)
 IT 85-44-9DP, 1,3-Isobenzofurandione, esters with acetals of hydrolyzed vinyl acetate-grafted polyurethanes 123-72-8DP, Butyl aldehyde, cyclic acetals with hydrolyzed vinyl

acetate-grafted polyurethanes 868-77-9DP, reaction products with **acetals** of hydrolyzed vinyl acetate-grafted polyurethanes 920-46-7DP, Methacryloyl chloride, esters with **acetals** of hydrolyzed vinyl acetate-grafted polyurethanes 923-02-4DP, N-Methylolmethacrylamide, reaction products with **acetals** of hydrolyzed vinyl acetate-grafted polyurethanes 4083-64-1DP, p-Toluenesulfonyl isocyanate, reaction products with **acetals** of hydrolyzed vinyl acetate-grafted polyurethanes 13881-54-4DP, 1-Propene-1-sulfonyl isocyanate, reaction products with **acetals** of hydrolyzed vinyl acetate-grafted polyurethanes 89868-58-6DP, cyclic **acetals** with hydrolyzed vinyl acetate-grafted polyurethanes 89868-62-2DP, cyclic **acetals** with hydrolyzed vinyl acetate-grafted polyurethanes 129212-53-9DP, hydrolyzed, cyclic **acetals** with butyraldehyde and formylstyrylpypidinium compds. 138938-13-3DP, cyclic **acetals** with hydrolyzed vinyl acetate-grafted polyurethanes 138938-14-4DP, cyclic **acetals** with hydrolyzed vinyl acetate-grafted polyurethanes 138965-17-0DP, cyclic **acetals** with hydrolyzed vinyl acetate-grafted polyurethanes 138965-19-2DP, cyclic **acetals** with hydrolyzed vinyl acetate-grafted polyurethanes (prepn. of, for photocurable lithog. compns. and coatings)

L64 ANSWER 27 OF 34 HCPLUS COPYRIGHT 2003 ACS

1990:189018 Document No. 112:189018 **Photoresists** containing aqueous alkali solution-soluble, silanyl group-containing binders. Wilharm, Peter; Buhr, Gerhard; Fuchs, Juergen (Hoechst A.-G., Fed. Rep. Ger.). Ger. Offen. DE 3811242 A1 19891019, 25 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1988-3811242 19880402.

AB The title binders, their prepn., and their use in prep. pos.- and neg.-working **photoresists** are described.

Photoresists contg. these binders are plasma-etchable and storage-stable and also show high heat stability. Thus, a soln. contg. a 2-(pentamethyldisilanyl)ethyl isocyanate-modified cresol-HCHO novolak resin, 2,3,4-trihydroxybenzophenone 1,2-naphthoquinone-2-diazide-5-sulfonyl chloride, Et glycol acetate, BuOAc, and xylene was coated on a Si wafer, dried, imagewise exposed, and then developed with aq. NaOH to give a pos. resist image having excellent resistance to plasma etching.

IT 9002-89-5DP, **Poly(vinyl alcohol)**, modified, esters with endo-anti-pentamethyldisilanylbicyclohepten edicarboxylic acid anhydride (prepn. and reaction of)

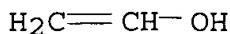
RN 9002-89-5 HCPLUS

CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O



- IC ICM C08G008-28
 ICS C08F008-42; C08F030-08; G03F007-08; G03F007-10
- ICA C08F008-00; C08F008-14; C08F008-30; C08F012-24; C08F016-06;
 C08F016-38; C08F020-26; C08F020-30
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST photoresist plasma etching resistance; pos
 photoresist binder silanyl group; neg photoresist
 binder silanyl group; binder silanyl group photoresist
- IT Polyimides, uses and miscellaneous
 (planarization layers from, for pos.-working photoresists
 contg. silanyl group-contg. binders)
- IT Phenolic resins, preparation
 (silanyl group-contg., for pos.-working photoresists
 for improved plasma etching resistance)
- IT Vinyl acetal polymers
 (hydroxybenzals, (pentamethyldisilanyl)ethyl acetate-modified,
 pos.-working photoresists contg. binders from, for
 improved plasma etching resistance)
- IT Resists
 (photo-, pos.-working, with binders contg. silanyl groups for
 improved resistance to plasma etching)
- IT Tannins
 (reaction products, with silanes, pos.-working
 photoresist compns. contg., for improved resistance to
 plasma etching)
- IT 9003-20-7, Poly(vinyl acetate) 9003-21-8, Poly(methyl acrylate)
 9003-53-6, Polystyrene 9011-14-7, Poly(methyl methacrylate)
 (planarization layer from, for pos.-working resist
 contg. silanyl group-contg. binder)
- IT 556-52-5D, Oxiranemethanol, reaction products with cresol-
 formaldehyde copolymer and (pentamethyldisilanyl)ethyl
 isocyanate 9016-83-5D, Cresol formaldehyde copolymer,
 reactions products with silyl group-contg. compds. 38333-84-5D,
 reaction products with silanyl group-contg. compds. 126050-58-6D,
 reaction products with phenolic resins
 (pos.-working photoresist compns. contg., for improved
 resistance to plasma etching)
- IT 5284-79-7 42573-57-9 68510-93-0 69666-56-4 115682-47-8
 125857-81-0
 (pos.-working photoresist contg. silanyl group-contg.
 binder and, with improved resistance to plasma etching)
- IT 9002-89-5DP, Poly(vinyl alcohol)
), modified, esters with endo-anti-pentamethyldisilanylbicyclohepten
 edicarboxylic acid anhydride 56090-54-1DP, Triglycerol, glycidyl
 ether, reaction products with cresol-formaldehyde
 copolymer and (pentamethyldisilanyl)ethylepoxypropylcarbaminic acid
 and tris(trimethylsilyl)silanylethyl isocyanate 125997-74-2DP,

reaction products with bis(pentamethyldisilanyl ethyl) carbodiimide 126050-60-0DP, reaction products with acetone-pyrogallol copolymers 126050-61-1DP, esters with modified **poly(vinyl alc.)** 126050-62-2DP, reaction products with hydroxyethyl methacrylate-pyrocatechol monomethacrylate copolymer 126050-63-3DP, reaction products with cresol-formaldehyde copolymer and triglycerin glycidyl ether and tris(trimethylsilyl)silanyl ethyl isocyanate 126050-64-4DP, reaction products with tannin 126050-65-5DP, reaction products with (pentamethyldisilanyl ethyl) epoxypropylphenol and poly(vinylphenol) 126050-66-6P 126069-63-4P 126069-64-5DP, reaction products with (pentamethyldisilanyl ethyl) epoxypropylphenol and poly(vinylphenol) 126069-65-6DP, reaction products with **poly(vinyl alc.)** hydroxybenzals 126069-66-7P

(prepn. and reaction of)

IT 59269-51-1DP, Poly(vinylphenol), reaction products with ethoxy(epoxypropyl)benzdioxol and tris(trimethylsilyl)silanyl ethyl isocyanate 126050-59-7DP, reaction products with acetone-pyrogallol copolymers
(prepn. of, as binders for **photoresists** resistant to plasma etching)

L64 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2003 ACS

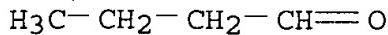
1989:544143 Document No. 111:144143 Poly(**vinyl acetal**), photosensitive mixture containing the same, and recording material therefrom. Pawlowski, Georg (Hoechst A.-G., Fed. Rep. Ger.). Ger. Offen. DE 3644162 A1 19880707, 16 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 1986-3644162 19861223.

AB Poly(**vinyl acetal**) that consists of 4-40 mol% vinyl alc., 1-20 mol% vinyl acetate, 0-85 mol% vinyl **acetal** units from a OH group-free aldehyde and 1-85 mol% vinyl **acetal** units from a OH group-contg. aldehyde are used as binders for photosensitive mixts. suitable for the prodn. of **photoresists** and printing plates. Materials prep'd. from these materials are developable with neutral or weakly alk. aq. solns. A roughened and poly(vinylphosphonic acid)-treated Al foil was coated with a soln. contg. poly(vinyl butyral 3-hydroxybutyral), a 4,4'-bismethoxymethyldiphenyl ether-3-methoxydiphenylamine-4-diazonium sulfate polycondensate mesitylenesulfonate, H₃PO₄, Victoria Pure Blue FGA, phenylazodiphenylamine, ethylene glycol mono-Me ether, and THF, dried, imagewise exposed to a std. neg., and developed to give an offset printing plate capable of producing >50,000 prints.

IT 123-72-8DP, Butanal, cyclic **acetals** with **poly(vinyl alc.)**
(prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)

RN 123-72-8 HCAPLUS

CN Butanal (9CI) (CA INDEX NAME)



- IC ICM C08F216-38
ICS C08L029-14; G03C001-71; G03F007-02; G03F007-10; G03F007-08
ICA G03F007-12; C08J003-24; C08J003-28
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST polyvinyl **acetal** binder photosensitive compn;
photoresist polyvinyl **acetal** binder; printing plate polyvinyl **acetal** binder; offset plate polyvinyl **acetal** binder
IT Vinyl **acetal** polymers
(**acetal** hydroxybutyral, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(benzal hydroxymethylpentanals, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(butyral hydroxybutyral, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(butyral hydroxypentanals, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(butyral methylmethylopropanals, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(chlorobenzal hydroxypentanals, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(ethylhydroxyhexanal **propanals**, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(formal (hydroxydimethyl)butyral, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(hydroxybutyral (methoxycarbonyl)benzals, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)
IT Vinyl **acetal** polymers
(hydroxyhexanal phenoxyacetals, prepn. of, as binders for photosensitive compns. for **photoresists** and printing plates)

- IT Vinyl acetal polymers
(hydroxypentanal propanals, prepn. of, as binders for photosensitive compns. for photoresists and printing plates)
- IT Vinyl acetal polymers
(methoxybenzal methylbenzals, prepn. of, as binders for photosensitive compns. for photoresists and printing plates)
- IT Lithographic plates
(offset, photosensitive compns. contg. poly(vinyl acetal) binder and, for photoresists and printing plates)
- IT Resists
(photo-, dry-film, photosensitive compns. contg. poly(vinyl acetal) binders for)
- IT 548-62-9, Crystal violet 602-56-2, 9-Phenylacridine 989-38-8
2509-26-4D, 4,4'-Bismethoxymethyldiphenyl ether, reaction products with methoxydiphenylaminediazonium sulfate, acetylenesulfonate 3453-83-6D, salts with bismethoxymethyldiphenyl ether-methoxydiphenylaminediazonium sulfate polycondensates 3524-68-3
3600-54-2 4065-45-6D, 2-Hydroxy-4-methoxybenzophenone-5-sulfonic acid, salts with bismethoxymethylbenzene-methoxydiphenylaminediazonium sulfate-methoxymethylmethyldiphenyl ether polycondensates 4986-89-4 5284-79-7, 2,6-Bis(4-azidobenzal)-4-methylcyclohexanone 6770-38-3D,
1,4-Bismethoxymethylbenzene, reaction products with methoxydiphenylaminediazonium sulfate and methoxymethylmethyldiphenyl ether, hydroxymethoxybenzophenonesulfonate 14338-22-8 15874-22-3, 4,4'-Diazidostilbene-2,2'-disulfonic acid 28110-26-1 29377-89-7D, 3-Methoxydiphenylamine-4-diazonium sulfate, reaction products with bismethoxymethyldiphenyl ether, acetylenesulfonate 41137-60-4 42573-57-9 60506-81-2
69432-41-3 73309-46-3D, Victoria Pure Blue FGA, cyclic acetals with poly(vinyl alc.)
90549-06-7 95524-26-8D, reaction products with bismethoxymethylbenzene and methoxydiphenylaminediazonium sulfate, hydroxymethoxybenzophenonesulfonates
(photosensitive compns. contg. poly(vinyl acetal) binder and, for photoresists and printing plates)
- IT 104-87-0DP, cyclic acetals with poly(vinyl alc.) 104-88-1DP, 4-Chlorobenzaldehyde, cyclic acetals with poly(vinyl alc.) 107-89-1DP, Acetaldol, cyclic acetals with poly(vinyl alc.) 123-11-5DP, 4-Methoxybenzaldehyde, cyclic acetals with poly(vinyl alc.) 123-72-8DP, Butanal, cyclic acetals with poly(vinyl alc.) 496-03-7DP, 2-Ethyl-3-hydroxyhexanal, cyclic acetals with poly(vinyl alc.) 597-31-9DP, cyclic acetals with poly(vinyl alc.) 615-30-5DP, 2-Methyl-3-hydroxypentanal, cyclic acetals with poly(vinyl alc.) 1571-08-0DP, Methyl

4-formylbenzoate, cyclic acetals with poly(vinyl alc.) 2120-70-9DP, 2-Phenoxyacetaldehyde, cyclic acetals with poly(vinyl alc.) 4221-03-8DP, 5-Hydroxypentanal, cyclic acetals with poly(vinyl alc.) 25714-71-0DP, 4-Hydroxybutanal, cyclic acetals with poly(vinyl alc.) 59434-71-8DP, cyclic acetals with poly(vinyl alc.) 89534-28-1DP, cyclic acetals with poly(vinyl alc.) 96013-98-8DP, cyclic acetals with poly(vinyl alc.)

(prepn. of, as binders for photosensitive compns. for photoresists and printing plates)

L64 ANSWER 29 OF 34 HCPLUS COPYRIGHT 2003 ACS

1988:580242 Document No. 109:180242 Langmuir-Blodgett films of acetalized poly(vinyl alcohol)s.

Oguchi, Kiyoshi; Yoden, Tomoko; Kosaka, Yozou; Watanabe, Masayoshi; Sanui, Kohei; Ogata, Naoya (Fac. Sci. Technol., Sophia Univ., Tokyo, 102, Japan). Thin Solid Films, 161, 305-13 (English) 1988. CODEN: THSFAP. ISSN: 0040-6090.

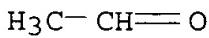
AB Monolayers and multilayers of amphiphilic polymers consisting of acetalized poly(vinyl alc.) (PVA) having various linear aliph. side chains were investigated, and their electron beam (EB) exposure characteristics were measured. Monolayers of acetalized PVA having long alkyl side chains were stable on H₂O and could be deposited onto both hydrophobic and hydrophilic substrates with a deposition ratio of 1.0. The resulting multilayers were Y type. The wettability of the multilayers changed according as there was an odd or an even no. of layers. The thickness per layer increased with the length of the alkyl side chain. These results suggested that Langmuir-Blodgett (LB) films of acetalized PVA having long alkyl side chains were well-ordered with the side chains directed normal to the main chains. The acetalized PVA prep. by the LB method is adaptable as a high resoln. neg.-type EB resist.

IT 75-07-0D, Acetaldehyde, reaction products with poly(vinyl alc.) 123-72-8D, Butyraldehyde, reaction products with poly(vinyl alc.)

(electron-beam exposure characteristics of Langmuir-Blodgett films of)

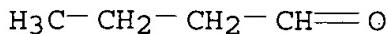
RN 75-07-0 HCPLUS

CN Acetaldehyde (8CI, 9CI) (CA INDEX NAME)



RN 123-72-8 HCPLUS

CN Butanal (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 36, 76

ST Langmuir Blodgett film polyvinyl alc; electron resist acetalized polyvinyl alc

IT Vinyl acetal polymers
 (butyral, electron-beam exposure characteristics of Langmuir-Blodgett films of)

IT Vinyl acetal polymers
 (dodecanal, electron-beam exposure characteristics of Langmuir-Blodgett films of)

IT Resists
 (electron-beam, Langmuir-Blodgett films of acetalized poly(vinyl alcs.) as)

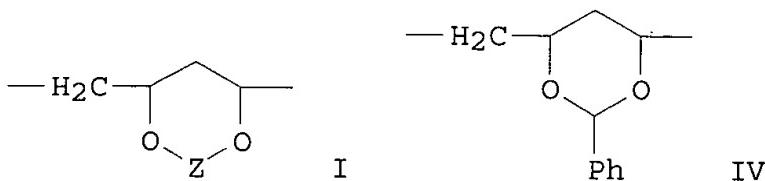
IT Vinyl acetal polymers
 (tetradecanal, electron-beam exposure characteristics of Langmuir-Blodgett films of)

IT Vinyl acetal polymers
 (tridecanal, electron-beam exposure characteristics of Langmuir-Blodgett films of)

IT 75-07-0D, Acetaldehyde, reaction products with poly(vinyl alc.) 112-31-2D,
 Decylaldehyde, reaction products with poly(vinyl alc.) 112-54-9D, Dodecylaldehyde, reaction products with poly(vinyl alc.) 123-72-8D,
 Butylaldehyde, reaction products with poly(vinyl alc.) 124-25-4D, Tetradecylaldehyde, reaction products with poly(vinyl alc.) 10486-19-8D,
 Tridecylaldehyde, reaction products with poly(vinyl alc.)
 (electron-beam exposure characteristics of Langmuir-Blodgett films of)

L64 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 1986:79248 Document No. 104:79248 Radiation-sensitive negative resist. Oguchi, Kyoshi; Takahashi, Yoichi; Nakada, Tomihiro (Dainippon Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60176033 A2 19850910 Showa, 8 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1984-31390 19840223.

GI



- AB A radiation-sensitive neg. **resist** for prepn. of integrated circuits is composed of an acetylated **poly(vinyl alc.)** (or its mixt. with other cosol. polymer) having an av. mol. wt. of 104-106 and contg. repeating units of the formula I (Z = hydrocarbon residue of an aldehyde or a ketone), CH₂CH(OR)R₂ (II; R = acyl; R₂ = a monomer unit polymerizable with vinyl acetate), and CH₂CH(OR₁)R₂ (III; R₁ = H, acetyl), and the contents (mol%) of I, II and III are 20-80, 10-50, and 5-70%, resp. The polymer gives high sensitivity, resoln., and resistance to dry etching of the **resist**. Thus, **poly(vinyl alc.)** (polymn. deg. 2000) was repeatedly treated with PhCHO in a soln. to give a polymer that had a mol. wt. of 150,000 and contained the units IV 70 and CH₂CHOH 30%. The product was acylated with dichloroacetyl chloride to give a polymer (av. mol. wt. 183,000) contg. IV 70, CH₂CH(OOCOCHCl₂) 15, and CH₂CHOH 15%. A Cr **mask** was coated with a PhCl soln. of the polymer and prebaked to form a 6000-.ANG. **resist** layer. Imagewise irradn. by an electron beam and development with MEK and iso-PrOH gave a pattern with 9.0 .times. 10⁻⁷ C/m² sensitivity. The postbaked **resist** was descummed by an O₂ plasma and etched in a CCl₄-O₂ plasma. The loss of thickness was 200 .ANG./min. The **resist** was removed by a H₂SO₄-H₂O₂ mixt. to leave Cr patterns having 2 .mu. lines and spaces.
- IC ICM G03C001-71
ICS G03C005-08; G03F007-10
- ICA H01L021-30
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **resist** lithog electron beam patterning; **polyvinyl alc** modified lithog **resist**
- IT Lithography
(neg.-working electron-beam-sensitive compns. contg. acetylated **poly(vinyl acetals)** for)
- IT Vinyl **acetal** polymers
(butyrals, neg.-working electron-**resist** compns. contg., for lithog.)
- IT **Resists**
(electron-beam, neg., contg. acetylated **poly(vinyl acetals)** for lithog.)
- IT Electric circuits
(integrated, neg.-working electron-beam-sensitive compns. contg. acetylated **poly(vinyl acetals)** for fabrication of)

IT 79-11-8D, esters with poly(vinyl acetals) 79-36-7D,
 esters with poly(vinyl acetals) 98-88-4D, esters with
 poly(vinyl acetals) 100-52-7D, cyclic acetals
 with poly(vinyl alc.), acetates
 104-88-1D, cyclic acetals with poly(vinyl alc.), acetates 814-68-6D, esters with
 poly(vinyl acetals) 4122-68-3D, esters with hydrolyzed
 poly(vinyl acetate) acetals 9003-20-7 9003-20-7D,
 hyrolyzed, cyclic acetals with acetaldehyde,
 chlorophenoxyacetates 24937-78-8D, cyclic acetals with
 acetaldehyde, chlorophenoxyacetates
 (neg.-working electron-beam resist compns. contg., for
 lithog.)

L64 ANSWER 31 OF 34 HCPLUS COPYRIGHT 2003 ACS
 1983:430755 Document No. 99:30755 Negative-type resist
 sensitive to ionizing radiation. Ogata, Naoya; Sanui, Kohei; Azuma,
 Chiaki; Tanaka, Hozumi; Oguchi, Kiyoshi; Takahashi, Yoichi; Nakada,
 Tomihiro (Japan). Eur. Pat. Appl. EP 77057 A1 19830420, 41 pp.
 DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW:
 APPLICATION: EP 1982-109354 19821008. PRIORITY: JP 1981-161430
 19811009; JP 1982-152645 19820903.

AB A neg.-working resist which is useful for lithog. prepn.
 of semiconductor integrated circuits and exhibits high sensitivity,
 resoln. and excellent etching resistance after hardening comprises
 acetalized poly(vinyl alc.) having a mol. wt. of 10,000 to
 1,000,000. Thus, a Si wafer was coated with a 8% resist
 soln. contg. a polymer (mol. wt. 90,000) obtained by the reaction of
 poly(vinyl alc.) with m-bromobenzaldehyde, baked at 90.degree. for
 30 min to give a 5,000 .ANG. film, irradiated with an electron beam
 (5 x 10⁻⁶ C/cm²), developed with MeCOEt for 1 min, rinsed with
 iso-PrOH for 30 s, baked at 140.degree. for 30 min, subjected to the
 scum elimination with an O plasma, dry etched with a gas mixt. of
 CF₄ with 2% O and subjected to an O plasma to peel off the
 resist to give a pattern of Si having alternately repeated
 lines of 0.5 .mu.m width and gaps of 0.5 .mu.m width.

IT 86284-87-9P
 (neg.-type resist for lithog. fabrication of
 semiconductor integrated circuits, prepn. and characteristics of)

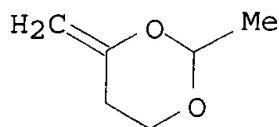
RN 86284-87-9 HCPLUS

CN Acetic acid ethenyl ester, polymer with ethenol and
 2-methyl-4-methylene-1,3-dioxane (9CI) (CA INDEX NAME)

CM 1

CRN 57877-32-4

CMF C6 H10 O2



CM 2

CRN 557-75-5
CMF C₂ H₄ O

CM 3

CRN 108-05-4
CMF C₄ H₆ O₂

IC G03F007-10; C08F008-28
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST vinyl acetyl polymer neg **resist**; lithog acetalized polyvinyl alc **resist**; semiconductor circuit neg **resist**
 IT Vinyl acetal polymers
 (lithog. neg.-type **resists** from, for semiconductor integrated circuit fabrication, prepн. and characteristics of)
 IT Semiconductor devices
 (**resists** for, neg.-type, from acetalized poly(vinyl alc.))
 IT **Resists**
 (electron-beam, neg.-working, from acetalized poly(vinyl alc.))
 IT Electric circuits
 (integrated, **resists** for, neg.-type, from acetalized poly(vinyl alc.))
 IT 104-88-1DP, cyclic acetal with poly(vinyl alc.) 86284-87-9P
 86284-89-1P
 (neg.-type **resist** for lithog. fabrication of semiconductor integrated circuits, prepн. and characteristics of)
 IT 83-38-5DP, cyclic acetal with poly(vinyl alc.) 89-98-5DP, cyclic acetal with poly(vinyl alc.) 99-61-6DP, cyclic acetal with poly(vinyl alc.) 100-52-7DP, cyclic acetal with poly(vinyl alc.) 100-52-7P, uses and miscellaneous 104-87-0DP, cyclic acetal with

poly(vinyl alc.) 108-94-1DP, cyclic acetal with poly(vinyl alc.)
 456-48-4DP, cyclic acetal with poly(vinyl alc.) 459-57-4DP, cyclic
 acetal with poly(vinyl alc.) 587-04-2DP, cyclic acetal with
 poly(vinyl alc.) 620-23-5DP, cyclic acetal with poly(vinyl alc.)
 874-42-0DP, cyclic acetal with poly(vinyl alc.) 1122-91-4DP,
 cyclic acetal with poly(vinyl alc.) 3132-99-8DP, cyclic acetal
 with poly(vinyl alc.) 5471-26-1DP, cyclic acetal with poly(vinyl
 alc.) 15164-44-0DP, cyclic acetal with poly(vinyl alc.)
 40137-29-9DP, cyclic acetal with poly(vinyl alc.)

(neg.-type **resists** for lithog. prepn. of semiconductor
 integrated circuits, prepn. and characteristics of)

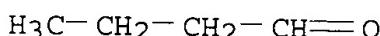
- IT 7782-44-7, uses and miscellaneous
 (plasma contg. carbon tetrachloride or carbon tetrafluoride and,
 etching of acetylated poly(vinyl alc.) **resist** with)
- IT 75-73-0
 (plasma contg. oxygen and, dry etching of acetylated poly(vinyl
 alc.) based **resist** compn. by)

L64 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2003 ACS

1981:629354 Document No. 95:229354 Hardening of **photoresist**
 patterns. (Sekisui Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo
 Koho JP 56078837 19810629 Showa, 3 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1979-156014 19791130.
 AB Resist patterns prep'd. by using **photoresists**
 contg. poly(vinyl alc.) are hardened
 by using C.ltoreq.8 aldehyde soln. contg. an acid catalyst. The
 degree of **acetal** reaction is .gtoreq.20 mol.%. Thus,
 resist patterns formed by using a **photoresist**
 compn. contg. poly(vinyl alc.) and
 4-diazodiphenylamine-**formaldehyde** copolymer were immersed
 in a soln. contg. butyraldehyde 3 and H₂SO₄ 0.5% to give hardened
 resist patterns.

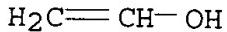
- IT 123-72-8
 (hardening of **resist** patterns by)
- RN 123-72-8 HCAPLUS
- CN Butanal (9CI) (CA INDEX NAME)



- IT 9002-89-5
 (**photoresist** compns. contg., hardening of patterns
 from, by aldehydes)
- RN 9002-89-5 HCAPLUS
- CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
 CMF C₂ H₄ O



IC G03C005-36; C08J007-12; G03F007-00; H01L021-30
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic Processes)
 ST hardening **polyvinyl alc photoresist**
 pattern; aldehyde **photoresist** pattern hardening
 IT **Resists**
 (photo-, **poly(vinyl alc.)**-based,
 hardening of patterns from, by aldehydes)
 IT 123-72-8 4170-30-3
 (hardening of **resist** patterns by)
 IT 9002-89-5 30939-08-3
 (**photoresist** compns. contg., hardening of patterns
 from, by aldehydes)

L64 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 1979:24462 Document No. 90:24462 Adhesive for binding metallic upholstery staples. Stranz-Milkowska, Barbara; Jaworski, Henryk; Zacharek, Lech (Fabryka Akcesoriow Meblowych, Chelmno, Pol.). Pol. PL 83971 19760130, 2 pp. (Polish). CODEN: POXXA7. APPLICATION: PL 1973-165251 19730915.

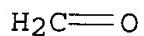
AB An adhesive compn. is disclosed for bonding stacks of upholstery staples to hold them together during handling and loading into staple guns. The compn. contains celluloid [8050-88-2] 16.6, citric acid 0.5, acetone 69.1, and **alc.** soln. of **poly(vinyl butyral)-phenol-formaldehyde** resin [9003-35-4] (viscosity 150-300 s, Ford cup) 13.8%. The adhesive dries in apprx. 2 min at 45-50.degree.. It has good adhesion to metal and it **resists** exposure to atm. conditions without crumbling.

IC C09J003-04
 CC 37-3 (Plastics Fabrication and Uses)
 IT Vinyl **acetal** polymers
 (butyrls, adhesives, contg. celluloid and phenolic resins, for upholstery staples)

L64 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2003 ACS
 1973:480189 Document No. 79:80189 Resistance of acetalated **poly(vinyl alcohol)** fibers to the action of acids and alkalies. Slin'ko, L. V.; Perepelkin, K. E. (USSR). Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation), 46(6), 1396-8 (Russian) 1973. CODEN: ZPKHAB. ISSN: 0044-4618.

AB **Poly(vinyl alc.)** fibers modified by acetalation with HCHO or PhCHO **resist** cold 20% H₂SO₄ and 10% NaOH. In hot solns. the **acetal** groups are hydrolyzed and the fibers begin to dissolve. The treatment with 20% H₂SO₄ or 10% NaOH also causes structural changes; the orientation of the acetalated fibers decreases, their shrinkage increases, and the tensile strength decreases.

IT 50-00-0, reactions
(with vinal fibers, acid- and alkali-resistance in relation to)
RN 50-00-0 HCPLUS
CN Formaldehyde (8CI, 9CI) (CA INDEX NAME)



CC 39-10 (Textiles)
ST polyvinyl alc fiber acetalation; acid resistant
vinal fiber; alkali resistant vinal fiber
IT Acetals
(formation of, from vinal fibers, acid- and alkali-resistance in
relation to)
IT 50-00-0, reactions 100-52-7, reactions
(with vinal fibers, acid- and alkali-resistance in relation to)